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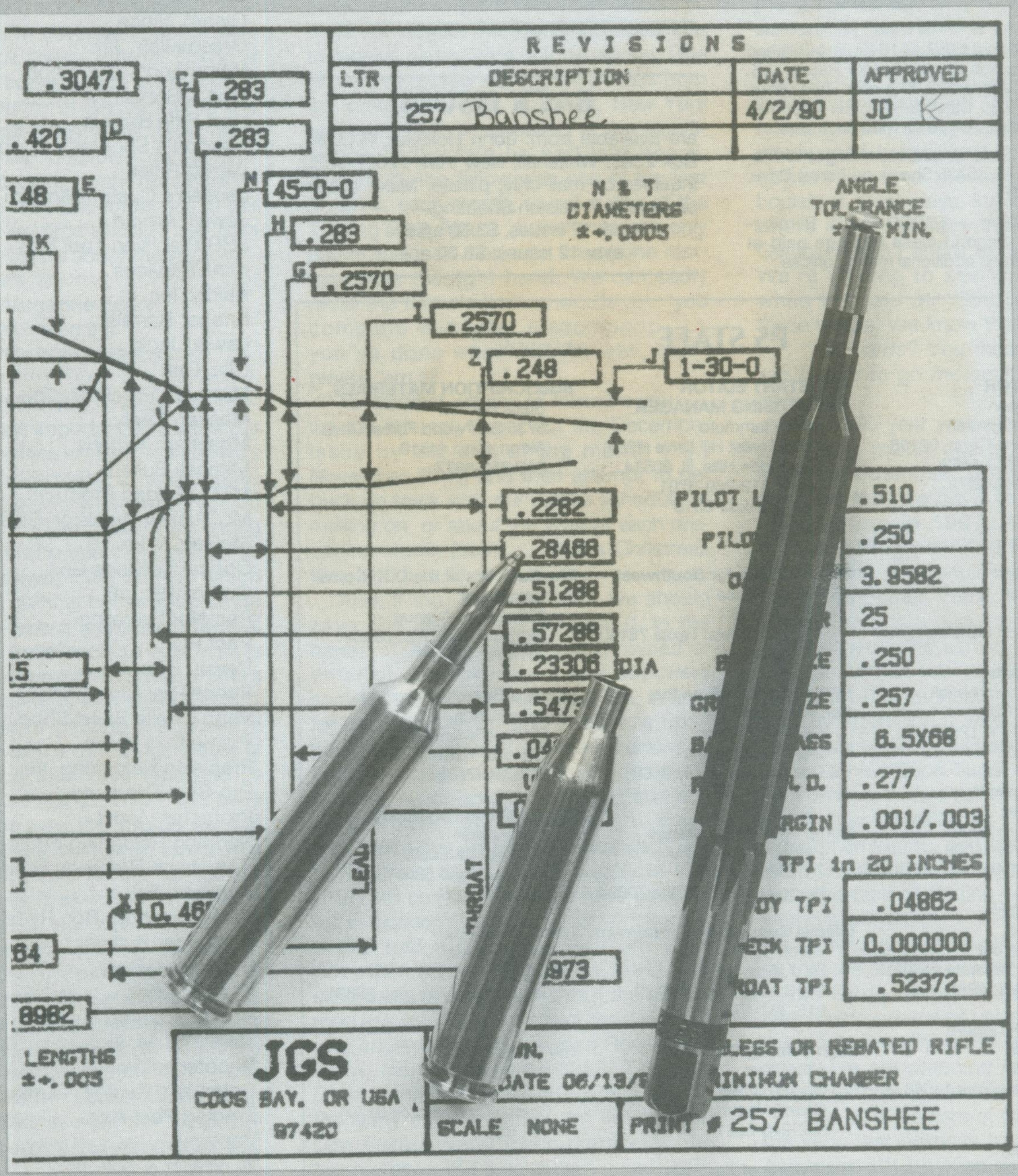
Precision SHOOTING

Dealing exclusively with the topic of extreme rifle accuracy


REVISIONS
LTR
DESCRIPTION
DATE
APPROVED
257 Banshee
4/2/90
JD
.30471
.283
.420
.283
148
45-0-0
.283
.2570
.2570
.248
1-30-0
N & T DIAMETERS ±+.0005
ANGLE TOLERANCE
.2282
.28468
.51288
.57288
.23306
DIA
.510
.250
3.9582
25
.250
.257
6.5X68
.277
.001/.003
TPI in 20 INCHES
.04862
0.000000
.52372
LEAD
THROAT
0.46
973
8982
LENGTHS ±+.005
JGS
COOS BAY, OR USA
97420
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MINIMUM CHAMBER

The 4000fps terror, JGS reamer, and before & after cases

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PRECISION
SHOOTING

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EDITORIAL

I was always touched by Walter Huston's rendition of "September Song." He's the only guy I ever heard sing it who sounded as though he knew whereof he sang. I'm sure somebody like Mabel Mercer (the interior voice says, "There was nobody like Mabel Mercer") might have done it justice, or Ray Charles, but I've never heard either of them sing it. Somehow, though, September seems like the wrong month for the sense of winding-down conveyed by "September Song." September is still a summer month in this temperature zone, and those lyrics really seem to be talking about November.

At my age, I'm developing some perspective about these things. Sixty, it seems to me, corresponds pretty accurately to the month of September in the song, which means that I still have glorious October to enjoy, followed by November—when the days really do begin to dwindle down—with December still to follow, which will be time enough and then some for speculations about mortality.

David E. Davis, Jr.
Automobile Magazine Editor
(Reflecting on life on the
occasion of his 60th birthday).

Well, at least it's nice to know that *Precision Shooting* is important to a lot of our readers. The November Issue was delayed (a masterpiece of understatement, it would seem) when we changed printers. The problem wasn't so much with our change of printers . . . but rather with the (censored) Post Office, which apparently had nothing better to do at the time than to make a (censored) federal case out of the transfer of our bulk mailing permit to the new city. Between yours truly, John Gammuto, and Stella Buchtel — we were each getting somewhere around twenty calls a day, at the height of the holocaust. One sincere type told us that he had heard that the editor had been fired, and that was the cause for the delay. When asked what local rumor was espousing as a cause for our abrupt termination . . . well, that wasn't too clear in anyone's mind . . . nor was it particularly important . . . what *was* . . . *quite* . . . important was . . . "where's my damn November issue?" We can only conclude, sadly, that the general readership sits by their respective mailboxes at about the time of arrival for *PS* each month . . . and stays there until the confounded magazine arrives. Neither rain, nor sleet, nor gloom of night deters them from their solitary vigil.

We are of course aware that our moving the printing job to Birmingham, Alabama has brought about a complete shift in the power base . . . at least as far as the Trading Post Classified Ads go . . . and what section of the country gets to see them first . . . and hence gets first crack at an occasionally underpriced little accuracy item. Every person who called us during the dark days of this little delay (hey, it was a *little* delay . . . stop behaving as though it was a millennium), upon being told the story about a recalcitrant Post Office, was understanding and sympathetic . . . once they had been reassured that the editor was still around (for better or worse, that), and the magazines were already printed and loaded on the truck, ready to go to the post office . . . once that august body would condescend to receive same. With one exception. One reader, who lived about 20-30 miles from our previous printer, in Elmira, New York was aghast, even appalled at the significance of the tale he had just heard. Apparently the fellow was one of the first persons, each month, to get a look at the Trading Post Ads . . . which, we can only gather, he can read with the phone resting under his right hand. We can sadly recall the fellow's parting words . . . "you complete and utter nincompoop . . . you"ve done *what*??!!" Ah well, can't please 'em all.

To do what we can to reassure you . . . we will attempt to get out the December issue by the end of the month (i.e., November 30th), and then attempt to get back on track with our overall schedule of mailing on or about the 25th of each preceding month (hmm . . . that's Christmas Eve, isn't it . . .?).

And, if the fates are kind, we should have *The Best of PS, Volume II,* in the hands of John Hollister and a myriad of other of our advertisers and suppliers somewhere around December 5th. In time for the holidays, for you to bestow upon your favorite cocktail waitress, bartender, or other similarly important personages in your life. As an aside, we understand that at least one of our advertisers . . . Precision Reloading, in Stafford Springs, Connecticut . . . has a decent supply of Volume I still on hand . . . if you have an interest in locating that now out of print item.

We had a call recently from a *PS* Advertiser, one Jef Fowler, the North Carolina bullet maker. Seems as if the gentleman has moved a tad down the road. His new address is 4003 Linwood Road, Gastonia, North Carolina 28052. The new phone number is (704) 867-3259. Back in the early to mid 1980s, Jef Fowler and Don Geraci pretty much dominated the big matches of benchrest . . . and while they were at it, each of them felt it pretty important to outdo the other one in just about everything imaginable. These old habits die hard, and one can only speculate on what were Mr. Fowler's (dark) thoughts on reading John Gammuto's recent write-up of Don Geraci's new home, with its outdoor range that Mr. Geraci can shoot without the horrible indignity of having to leave the house proper. Mr. Fowler tells me that his new home, also with a bench -in-the-house setup, permits 300 yard shooting (not a crummy 200 yards, like the serfs and peasants have to settle for) from his screened side porch, adjacent to his den. Indeed he can, if he is of a mind, watch TV through the den's sliding glass door (he emphasizes that it is a very large screen TV), and after a particularly good practice group he can saunter directly to the den's hot tub . . . to properly luxuriate in his accomplishment. Throughout all this (we were frantically taking notes) was interspaced (suspiciously) sad comments about how bad the economy was in Louisiana these days, indeed to the point where it was obvious that his old friend Geraci couldn't afford to do the job *right*. We're waiting to see what transpires when the said Mr. Geraci gets to read these words. We know that it will start off . . . "300 *yards*? You mean the guy was too cheap to go *meters*?" And we'll go from there . . .

The 1990 year was a busy one for us personally, mainly due to personal pressures of business. However we have resolved that we have to get back into things more in 1991. And, with 500 rounds through our Old Reliable heavy varmint rifle, it's awfully obvious that it's not a barnburner. Heck, it doesn't seem to even be a true quarter minute of angle barrel. There's no sense running around half the known world with a barrel that won't cut the mustard. So, on a recent Sunday afternoon it was off to Yonkers, New York where Jim Greenawalt was told to put a new 6ppe barrel on old reliable. And, while we were about it, we gave him a Hall B actioned heavy varmint rig in .30 Opus chambering, and told him to rebarrel to .30 wombat. We've put off too long this little task of finding out whether the wombat will shoot . . . or not. People who are knowledgeable about such things tell us that we really should have tried H4895 in the Opus, rather than the common benchrest practice of using H322 for anything and everything. We shall see. In any event, we are planning on hitting a half dozen benchrest matches in 1991.

From all of us here at *PS* magazine . . . the very best holidays to you and yours. And may 1991 be good to you as well . . . all year long.

The Master of Toad Hall

WHO'S CHAMBERING FOR WHAT?

(Editor: It seems that we forever have some dear soul calling us . . . excited, having just reached a great decision in his life . . . and asking something like . . . "hey, who's chambering for the Lindahl Chucker these days?" It could be the Lindahl Chucker; it could be the .260 AAR; it could be the .416 Rigby, hell, it could be almost anything. So you could look at what follows in two ways. . . . 1) The *PS* people do whatever they can to help us; truly they are princes among men . . . wonderful souls indeed. or, 2) The blankety-blanks are tryin' the easy way out here; characteristic of the low breed of humanity that they are. In an independent telephone poll, of five hundred calls to *PS* readers . . . adjudged to have an accuracy level of plus or minus five percent . . . five hundred and one of our readers selected reply #2. We are attempting to find out who it was that voted twice. For the record, all *PS* advertisers who do chambering were asked to reply. In addition, a few gunsmiths who are not advertisers, but who have fairly regularly contributed input to our pages were included in the invitation.

Dan Lilja

Lilja Precision Rifle Barrels Inc.
245 Compass Creek Road
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223
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225 Win
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220 Swift
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6 x 47
6 Hex
6 Rem BR
6 PPC
6 x 44
6 - 250
243 Win
6mm Rem
6 - 284 Win
240 Whby Mag
250 Savage
257 Roberts
257 Robt Ack Imp
25-06
257 Whby Mag
6.5 x 55
6.5-06
264 Win Mag
270 Win
270 Whby Mag
7 Rem BR
7 x 44
7mm-08
7mm-08 Ack Imp
7 x 57
284 Win
280 Rem
280 Ack Imp
7mm Rem Mag
7mm Whby Mag
7mm STW
7 Super
30 Rem BR
30 x 44
308 Win
30-06
30-284
300 H&H Mag
308 Norma Mag
30-228 Win Mag
300 Win Mag
30-8mm Rem Mag
300 Whby Mag
30 Super
30-378 Whby Mag
338-06
338 Win Mag
340 Whby Mag
338 Super
338/416 Sniper
338-378 Whby Mag
358 Win
35 Whelan
350 Rem Mag
358 Norma Mag
35 STA
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22 K. Hornet
218 Bee
218 Mash. Bee
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222 Rem. (.255)
222 Rem. (.250)
222 Rem. (.246)
222 Rem. (.242)
222 Rem. 40°
223 Rem.
222.7 (.246)
222 Rem. Mag. (.250)
22 PPC (.243)
22 PPC (.248)
22 PPC Sport
22 B.R. (.248)
22 B.R. (.244)
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219 Zipper Imp.
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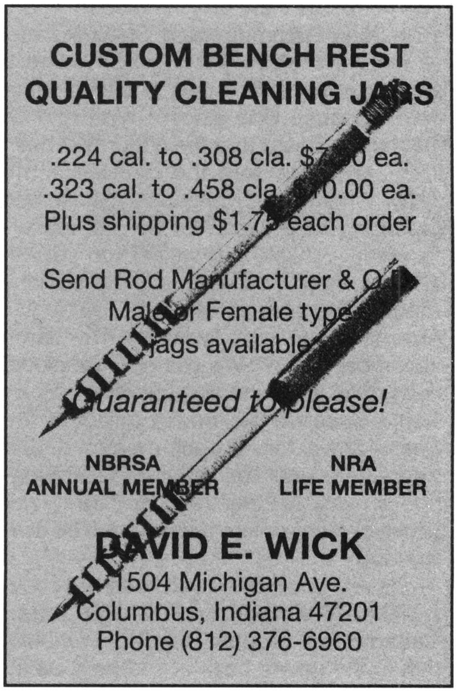

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30-06 Ack. Imp.
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300 Win. Mag. (.336)
300 Wby.
30 x 8mm Rem. Mag.
30-378 Wby. (.341)
30-40 Krag
338 D.G.B.
338-06
338 Win.
340 Wby. Mag.
338 x 378 Wby.
338 x 375 H. & H.
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358 Norma Mag.
350 Rem. Mag.
35 Rem.
38-55
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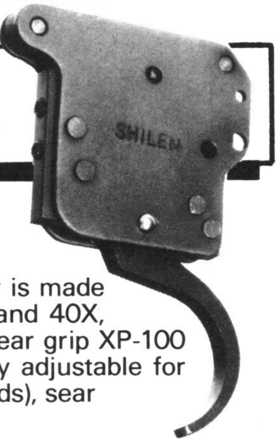

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.280 Rem.
.280 Ack. Imp.
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7mm STW
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.30-06 Ack. Imp.
.308 Winchester
.300 Win. Mag.
.300 Jarrett
.300 Wtby.
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7MM IHMSA
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7 x 61 S & H
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7MM Remington Mag.
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30-06
30-338
300 Winchester Mag.
308 Norma Mag.
300 Weatherby Mag.
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220 Swift
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6 x 47 Tight Neck
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6mm PPC Long Throat .262 Nk.
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6mm Rem. BR Std. & Tight Neck
6mm Talldog Std. & Tight Neck
6mm HLS
6mm/250
243 W.h
243 Ackley Imp. 40° Tight Neck
6mm Rem.
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308 Win. Tight Neck
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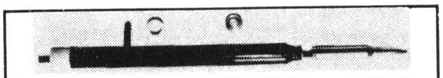

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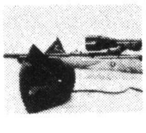

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.219 Don. Wasp .247 Neck dia.
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6mm S.M.H. (Hunter Class on 30-30 or 30 American Brass—.262 Neck dia.
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.257 Ackley Imp.
.25-06
.270 Win.
.270 S.M. (Short)
7 x 57
7mm-08 Std. & .305 Neck dia.
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22 Hornet

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6MM BR

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.223 Rem.
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.222 Rem. Mag. 35° .246 NK
.219 Ack. Zipper .246 NK
.22-250 Rem.
.22-250 Ack. Imp. .251 NK
.220 Swift
.220 Swift .254 NK
.22 Cheetah .252 NK
.22 PPC
.22 BR
6mm PPC .265 NK
6mm PPC .264 NK
6mm PPC .262 NK
6mm BR .265 NK
6mm BR. 262 NK
6mm American
6 x 47
6mm Spencer (6mm x .221)
.243 Win.
.243 Ack. Imp.
6mm Rem.
6mm .284
.240 Wby. Mag.
6.5 x 47
6.5 BC
.257 Ack. Imp.
25-06 Rem.
.270 Win.
7mm BC
7mm IHMSA
7mm BR
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.280 Ack. Imp.
.284 Win.
.708 Rem.
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7 x 57 .323 NK
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.308 OBER
.308 .336 NK
.30-06
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17-224 Wby. Mag.

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6mm 222 Rem.
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6mm Cheetah 28
6mm BR
6mm 221 Fireball
6mm 22-250
6mm 22-250 Imp. 28
6mm 30/30 Win.
6mm PPC
6mm Rem. Int.
6mm Rem.
243 Win.
243 Ack. Imp. 40
243 Rockchucker
6mm 06
6mm 06 Ack. Imp.
6mm 350 Rem. Mag.
6mm 284 Win.
244 H & H Mag.
244 H & H Ack. Imp. Mag.
240 Gibbs

25 Cal. 257
25 PPC
25-222 Rem.
25-222 Rem. Mag.
25 Rem. BR
25 x 47
25 Rem.
25-20 Win.
256 Win. Mag.
25 IMSHA
25-225 Win.
25 Cheetah MKI & II
25-308 Win.
25-308 Ack. Imp.
25 Krag
25 Ack. Krag
25-243 Rockchucker
250-3000 Sav.
250-3000 Ack. Imp.
251 Roberts
257 Ack. Imp.
25-06 Rem.
25-06 Ack. Imp.
25-284 Win.
257 Wby. Mag.
25-275 Hoffman
25 Gibbs
25-300 Win. Mag.
25-264 Win. Mag.

6.5 MM (264)
6.5 Rem. BR
6.5 x 47
6.5 223 Rem.
6.5 222 Rem.
6.5 Rem. Int.
6.5 30/30 Win.
6.5 Cheetah MKI & II
6.5 3000 Sav.
6.5 3000 Ack. Imp.
6.5 Mann Scho
6.5 257 Roberts & Ack. Imp.
6.5 Jap
6.5 308 Win.
6.5 308 Ack. Imp.
264 Win. Mag.
6.5 Rem. Mag.
6.5 284 Win.
6.5-06

6.5 06 Imp.
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6.5 Mashburn Mag.
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270 Win.
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7mm Ack. Mag. #1
7mm Mash Supe Long
7mm STW Mag.
7mm 300 Wby. Mag.
7mm Wby. Mag.
7mm 378 Wby. Mag.

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30 x 47
30 IMSHA
32-20 Win.
300 Sav.
208 Win.
308 Ack. Imp.
30 Int-R
308/1½
30-30 Win.
30-06
30-06 Ack. Imp.
30 Gibbs
30-338 Win. Mag.
300 Ack. Mag.
308 Norma Mag.
30-350 Rem. Mag.
300 Win. Mag.
300 Wby. Mag.

30-378 Wby. Mag.
8MM (323)
8mm IMSHA
8mm/308 1½
8mm 308 Win.
8mm 308 Ack. Imp.
8mm 06
8mm 06 Ack. Imp.
8mm Gibbs
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8mm Rem. Mag.
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338 Cal.
338/08 Win.
338 IMSHA
338 06
338 -6 Ack. Imp.
338 Gibbs
338 300 Win. Mag.
338 Win. Mag.
338 8mm Rem. Mag.
340 Wby. Mag.
338 378 Wby. Mag.
338 378 K.T.
338 378 Wby. Mag.

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35 Whelan
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444 Marlin
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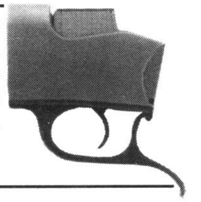

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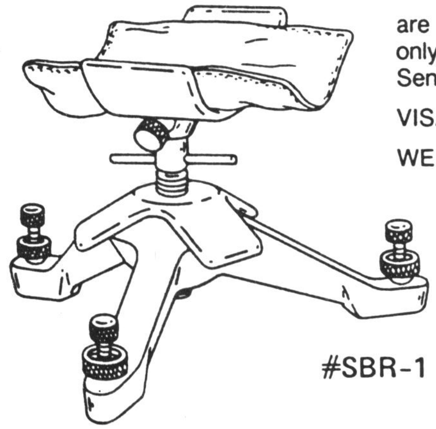

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6 x 47
240 Coyote
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6mm Rem
6 PPC
6 BR Rem.
6mm Russian
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257 Roberts
257 Ackley Imp.
25-06
264 Win. Mag.
250 Coyote
(25 x 30-30)
25 PPC
270 Win.
270 x 308
7-08
7mm x 30-30
7 x 57
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30-06
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Cal.	Twist	Cartridges
17	10 & 12	17 Ackley Bee, 17-222, 17-222 Mag., 17-223, 17 Rem.
22LR	14 & 16	No Chambering
22CF	9, 10, 12, 14 & 16	219 Lovell Imp., 222 Rem., 219 Don, 22-250, 220 Swift, 222 Mag., 222 Rimmed, 225 Win., 223 Rem. or 5.56mm, 219 Zipper, 218 Bee, 22 B.R., 221 Rem. 22 Rem. BR., 22 Cheetah Mark I 40° shoulder, 22 Cheetah Mark II 27° shoulder, 22 PPC Sporter, 22 Hornet.
6mm	9, 10, 12, & 14	243 Win., 244 Rem., 6mm Rem., 6mm-222 Mag., 6mm Rem. International, 243 Rock Chucker, 243 Super Rock Chucker, 6mm-284, 240 Wby. Mag., 6mm-225 Krag Imp., 6mm BR. 6mm-22-250. NOTE: 6mm- 222 Mag. is the same as the 6 x 47 mm. The 243 Super Rock Chucker is a version of the 30-06 necked to 6mm. Dies are available from RCBS. 6mm Rem. BR 6mm-223, 6mm PPC Sporter.
25	10, 12 & 14	257 Roberts, 25-06, 257 Imp., 257 Wby., 25 Krag, 25-06 Ackley Imp., 25 Imp. Krag, 250-3000 Sav. 256 Mag., 25-284
6.5mm	8, 9 & 10	6.5 x 55mm, 6.5 x 257, 6.5 x 61 S&H, 264 Win., 6.5 x 54 Mann. Sch., 6.5 x 06, 6.5 x 284, 6.5-300 Wby., 6.5 Rem. Mag.
270	10 & 12	270 WCF, 270 Imp., 270 Wby.
7mm	9, 10 & 12	7 x 57, 7mm Ackley Imp., 7mm Wby., 284 Win., 280 Rem., 7 x 61 S&H, 7mm Rem., Mag., 7mm-308, 7mm-300 Wby., 7mm Rem. Exp., 7mm-06, 7mm TCU, 7mm-08 7mm BR, 7mm STW
30	10, 12 & 14	308 Win., 7.62 NATO, 30-06 Standard & Improved, 300 Win., 300 H&H, 300 H&H Imp., 30-30, 30-40 Krag, 300 Wby., 308 Norma Mag., 30-338, 30-378 Wby.
32 S&W Long	12, 14 & 16	No Chambering
32-40	14, 16, 18 & 20	32-40 Win.
8mm	10 & 12	8 x 57mm, 8mm-06, 8mm Rem. Mag.
338	10 & 12	338 Win., 340 Wby., 338-06
35	10, 12 & 14	358 Win., 350 Rem. Mag., 358 Norma Mag., 35 Whelan Standard and Improved
38 Spec.	10, 12, 14 & 16	No Chambering
375	12, 14, 16 & 18	375 H&H, 375 H&H IMp., 375 Wby., 38-55 WCF, 375 Win.
405	14	405 Win.
416	12 & 14	416 Taylor, 416 Rem.
41 Mag.	14 & 16	No Chambering
44 Mag.	14, 16 & 36	No Chambering
45 ACP	14 & 16	No Chambering
458	14, 16, 20 & 22	458 Win., 458-2 American, 45-70
50	36	No Chambering—intended for 50 Sharps cartridge only

NOTE: 7mm-08 and the 7mm-308 are the same.

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MARCH 3, 1991: Heavy Varmint 505 shot matches at 200 yards
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The first match in each class of yardage will be a ten (10) minute match. Yardage bench rotation.

FEES: Registration fee of $15.00 per day. This is an NBRSA registered shoot. The cash option fee is $30.00 per day. All cash option fees wil be returned to the competitors. You do not have to participate in the cash option. The merchandise will be awarded by your finish in the 100 yard Heavy Varmint aggregates and distributed Sunday morning.

AWARDS: CASH TO BE AWARDED AS FOLLOWS:

Match Winners	2 Places
Aggregates	3Places
Grand Aggregates	6 Places
Two (2) Gun	20 Places

TROPHIES TO BE AWARDED AS FOLLOWS:

100 Yard Aggregate	5 Places
200 Yard Aggregate	5 Places
Grand Aggregate	8 Places
Two Gun Aggregate	10 Places
Small Group Each Range Each Gun	4
H & S Precision Trophy Two Gun Champion	1

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Please make your own reservations. Other motels available.

ACTIVITY: There will be a get to know you gathering at the SHOOTING RANGE CLUB HOUSE Friday evening March 1. Complementary food and beverages will be served.

ENTRY FORM: **Send entries to and make checks payable to:**

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Total fee for two days $90.00
You must be an NBRSA or IBS member to shoot

Preregistration is required. Registrations limited to 165 competitors. Payment must accompany registration. No phone registrations. Total refund on cancellations to Feb. 15. No refunds after Feb. 15, 1991. This is a result of having to tell shooters that we were full and then having no shows the day of the match.

Signature ____________________ Date ____________

Name ____________________________________

Street ____________________________________

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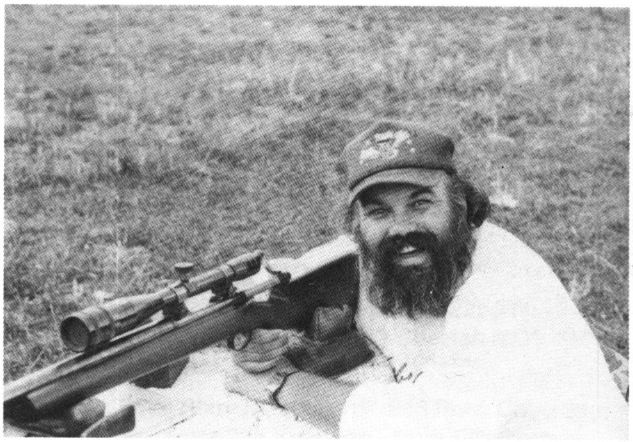
Rich Kayser



Unfortunately there is no good news to report on the .257" bullet situation. We are still waiting on J4 for the jackets. The date on the jacket production is sometime in November, with bullet dies a month behind that. The good news is . . . they are coming . . . sometime. It is more frustrating on this end, believe me. I have a brand new rifle, and no bullets.

I made a run up to Washington state the last weekend of October, and killed three (benchrest) birds with one stone. I got in visits with Steve Kostanich, Russ Haydon, and Mac McCluskey over a two day period, that allowed me to pick up a new rifle, cleaning supplies and a few of Mac's custom bullets for the rifle.

The first leg of my journey took me to Chehalis, to finally pick up my new rifle. As most of you know, Steve Kostanich (noted rifle builder and benchrest competitor in the Pacific Northwest) is building the .257" Banshee. The rifle and loading dies were finally ready.

The second leg of the trip took us north about an hour to Tacoma, to check out the new *PS* advertiser, Russ Haydon's store.

Those of us that live in the less populated states out west do suffer in comparison with the eastern half of the country when it comes to buying the myriad of accuracy toys needed. Bob Pease and Fred Sinclair stock a full line of accessories, as do several others; but it is a 5-day drive for the UPS truck to Idaho. We now have a stocking accuracy-oriented place to shop in the Pacific Northwest.

I am sure that you all have noticed the ads in *PS* for Russ Haydon's Shooters" Supply in the past few months. I set my trip to allow spending some time visiting with Russ, to get some idea of what mailorder buyers can expect.

The last leg of my journey centered around the source of the most accurate 25 caliber bullets available at this time: McCluskey's Precision Rifles in Seattle.

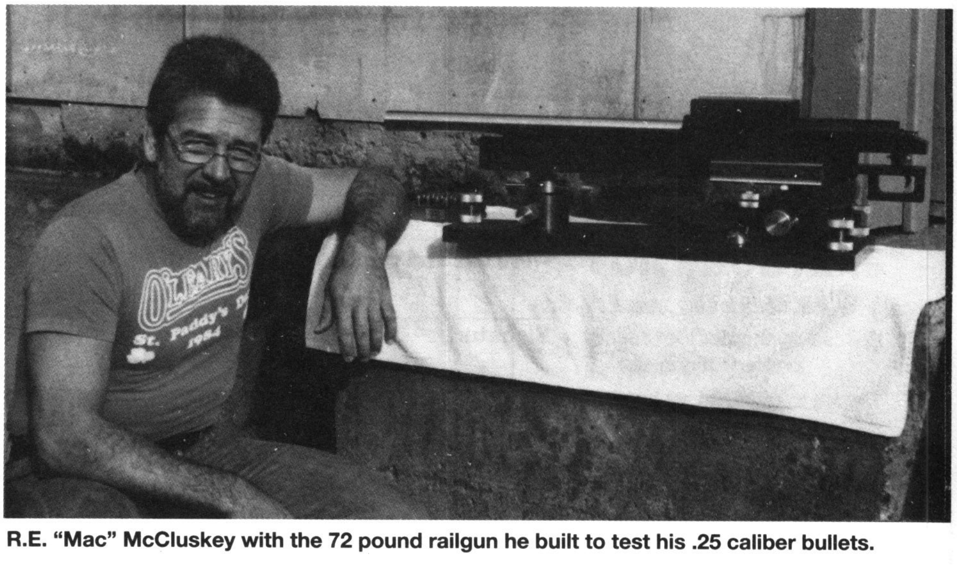
I have been a .257 caliber fan all my life, a passion that Mac and I share. Mac has the skills to do more than just want a good bullet (or two) for the 25. For the past few years he and Manley Oakley have focused their talent, spare time, and considerable money on a 25 BR case and quality bullets in that caliber. The design they settled on is an 86 grain flatbase bullet. It has a 9 caliber ogive, a bearing surface of .258", and an OAL of .900."

Those were the bullets I shot this spring on chucks, with a near perfect record. I missed one chuck under 500 yards, and hit several at distances from 650 to over 725 yards. I am trying to convince Mac to produce this bullet in quantity, and to consider some other designs in 25 caliber as well. He has made a limited quantity available, (see *PS* ad) and is looking at regular production when Walt Berger gets the jackets from J4. I had the chance to spend a couple hours at Mac's shop, discussing .25's and what goes into a McCluskey Precision Rifle. One look at the October *PS* cover should give a basic idea of the accuracy standards at MPR.

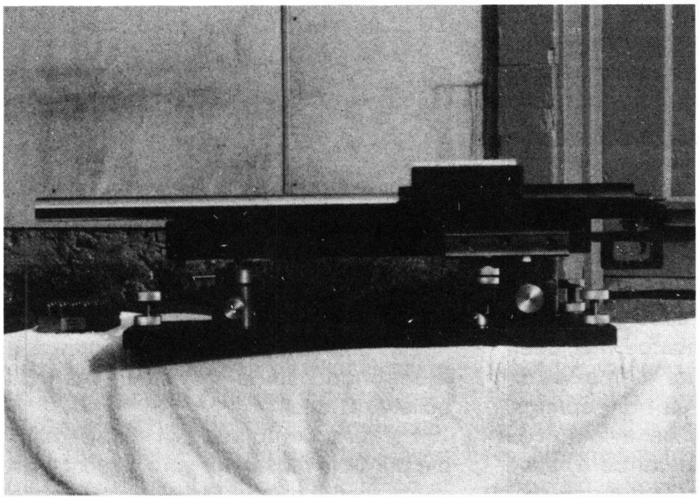
Mac McCluskey is one of those Renaissance Men that dot the Benchrest landscape. He owns R.E.M. Associates, a commercial photography company in the Seattle area. That venture took Mac all over the world, and allowed him to pursue his hobby (obsession?) of scuba diving throughout the Pacific Ocean. The operating room clean shop he works out of is peppered with photographs he has taken.

We had the opportunity to talk for three or four hours about rifles, and bulletmaking, and taking good pictures. As a note of interest, Mac took the photo of the Banshee tooling that graces this issue of *PS*. His business card reflects his photographic, as well as his gunmaking skills. If you have a dollar and a SASE, send off to Mac for a copy. It is impressive!

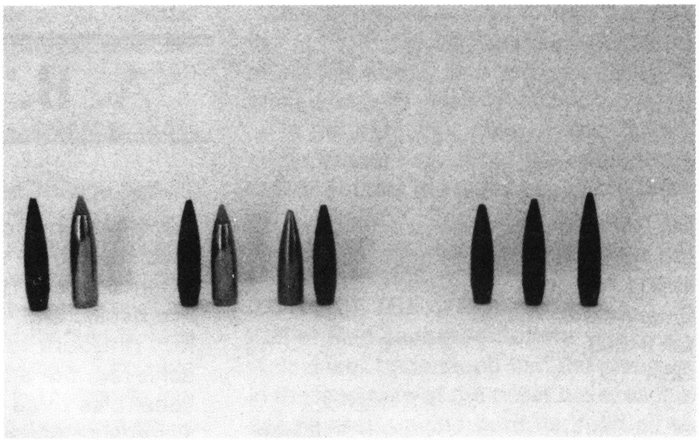
One last note, to sound a positive one, regarding bullets. When I got back from the long haul weekend in Washington and sorted out all the mail, I had a letter with some bullets waiting for me. Those of you who look at the picturesfirst will have noticed some very streamlined



R.E. "Mac" McCluskey with the 72 pound railgun he built to test his .25 caliber bullets.



A closer look at the railgun, with its Weber action.



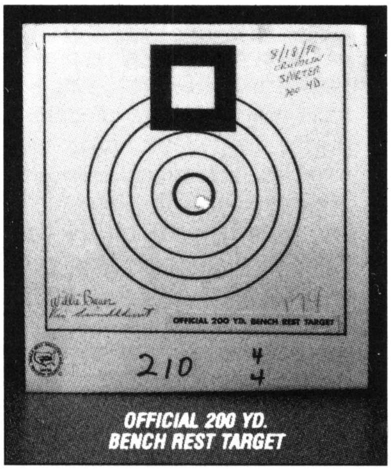
These are some . . . interesting .224" bullets being made. 70, 75, and 80gr. Shown with the McCluskey 86gr LoDrag, and the 85 and 100gr Nosler .25 caliber Ballistic Tip bullets.

.224" bullets standing next to 100 and 85gr Nosler Ballistic Tip bullets, and one of McCluskeys' 86gr LoDrags. They are being considered for regular production, if the market is large enough to make it a viable business. Price would be in the $14 per hundred range. If you are interested, drop me a line. If there is enough demand, the maker might run an ad in *PS* and to to work filling orders. The C7 numbers are .206 for the 70gr, .220 for the 75gr, and .256 for the 80gr. The 70 and 75gr are 12 caliber ogive, the 80 is a 15 caliber ogive. I understand that doubling the C7 figure gives a rough approximation of the ballistic coefficient. I have been told that the 70 and 75gr need a 9" twist, and the 80gr needs an 8" to shoot best. Getting quality jackets is hobbling these bullets' development program, just as it has the .257" LoDrag project.

I don't understand why getting jackets made to BR specs (.0002") is such a lengthy project. There must be something I don't know about.

A last note: with this issue Dave Brennan is giving me a little space to highlight the 5 state Pacific Northwest area craftsmen and competitors who contribute to our sport. I hope to make the Pacific Northwest Profiles a monthly addition to *Precision Shooting.* There are a lot of people who have contributed to benchrest in this area.

A COOL GROUP



Bill Brawand made a bold move on August 18, 1990 in London, Ontario. He chose a new powder to back his own 63 grain 6mm PPC bullets in the 200 yard Sporter Class competition at the Crumlin Range. The choice didn't disappoint him.

Bill shot a .174 group to set a new club record! We congratulate him on this accomplishment and are pleased he chose our Cooler Burning BRIGADIER 3032 to back his best shot yet!

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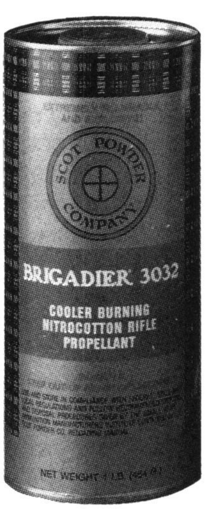

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A. B. BAILEY

Mr. Creighton Audette
c/o Mr. Merrill D. Martin
1250 67th Street
Emeryville
CA 94608
USA

12th July 1990

Dear Mr. Audette

I am writing to you personally, care of Mr. Martin, to thank you very much for your lengthy analysis (June P.S.—to hand yesterday) of my letter published in May P.S. To be frank, I had not anticipated that that letter would generate the level of interest to justify forwarding for publication and I would have presented the material somewhat differently had I realised that.

Let me outline my credentials. I am now "invalidated out" after 40 years in engineering, of which nearly 30 years were in U.K. defense related work. Right at the beginning I specialised on gun armament for aircraft but speedily recognised there was no career possible in the U.K. and moved to missile propulsion. I was then working on liquid fuel rocket engines and found myself initially doing R&D on sealing problems as an aspect of propellant pumping systems. At that time (1955) there was no understanding of the mechanism of sealing and this had to be acquired speedily to ensure that static and sliding seals for aggressive liquids and gases would function. I ought to interject here that in those early days I repeatedly saw that "handbook engineering" only functioned satisfactorily in the context of well understood environments, such as water or compressed air, and invariably lead to hardware unacceptably heavy due to overly conservative design factors. I should also add that an essential part of applied R&D of this sort is a very clear understanding of what can be manufactured.

The summary of that work is as follows:

1. There is always some leakage (no matter how small) and the seal system design has to take this into account. The leakage occurs through surface imperfections and has to be recognised even at atomic scale for hydrogen and helium gases.

2. The effect of leakage is to create a force tending to open the seal faces which has to be at least balanced by an external force. This latter force is often hydrostatic and, in the case where perfect pressure force balance has been achieved, the addition of a small additional bias force (such as from springs) will ensure satisfactory behaviour. You will see that FORCE balance a more refined statement of the handbook recommendation for PRESSURE balance. A flanged gasketed joint relies on the bolt-up preload being sufficient to prevent joint opening.

3. In a situation where the pressure difference along the leakage path varies with time (as of course it always does) there will be no sealing effect unless there is an initial preload on the sealing surfaces to ensure a pressure drop along the seal face. This preload can be very small.

4. Perfectly satisfactory sealing can be obtained from a nominal line contact (such as a knife edge) provided that the edge does not crack when it collapses or wears.

5. Effective seals can be made from any material provided that the behaviour of the seal material has been fully anticipated in service. (I should mention here that polythene "O" rings and gaskets performed satisfactorily for sealing concentrated hydrogen peroxide.)

The "O" ring complies fully with the above prescription. It was work at about that time on the ring (which also was not understood) which showed that it behaved as a "controlled liquid." The "O" ring is an example of a seal which commences as a line contact which deforms in a controlled manner under preload. It will work well even if the initial preload dimensional interference is reduced almost to nil. It will not work at all with a finite clearance but it can be persuaded to work in this condition with liquids if the pressure is suddenly applied. This is so because it takes time for the flow through the clearance to become established and for a short time a pressure differential favourable to sealing exists and this closes off the leakage path.

Personally, my view of Mr. Merrill Martin's discovery of the efficacy of P-wads falls into the category of: "of course!"— where, as with all significant progress, one is left wondering why it had not been invented years previously. I imagine that, like most things, it has the potential of refinement without limit but (from this distance) it would appear to be good enough.

As I said in my letter to Mr. Martin, the real conundrum is why does the lead bullet NOT seal.

I should like to suggest that perhaps the principle reason for your dissent from my perception (and Mr. Martin's) of the functioning of the P-wad lies in that it is NOT AT ALL suitable for a long term usage industrial seal. Unlike the industrial seal, whose life expectancy will be measured in thousands of hours, the service life of the P-wad is about 1.5 milliseconds. And THAT circumstance permits drastic liberties to be taken.

In that context I recall work which was done on a built up gun somewhat similar to that which you described in the June P.S. where the seals were ordinary 90 Shore rubber "O" rings with a maximum breech pressure of 50,000 psi. The rings "O" rings sealed adequately for one shot only and each time were found to be about 50% extruded into the clearance.

As I have indicated in previous letters to Mr. Martin I have followed the progress of this invention with the greatest interest and as a result of that enthusiasm I carried out a literature search on related material which supports the contention that any material can be used as a seal. I have enclosed a copy of that search which you may find of interest.

On another note you will be aware that here in the U.K. we do not anymore have a firearms manufacturing industry due to the negative attitudes of successive U.K. governments (known to be fear of revolution!). I am enclosing a copy of a journal article which I wrote with the (unrealised) objective of stimulating interest over here. It is a design engineer's perception of where "the accurate rifle" should go next. As might be anticipated it is underpinned by the notable work carried out by the benchrest community in the USA. I am uncertain whether you will find controversial elements within it but I hope you will find it of interest.

I have taken the liberty of sending this via Mr. Merrill Martin as an open letter. I hope this is acceptable to you. It will at least speed any further dialogue!

Yours sincerely
A.B. Bailey

OBTURATION AND LUBRICATION OF LEAD BULLETS

by A.B. Bailey

INTRODUCTION

This set of notes was stimulated by an on-going correspondence in the American journal *Precision Shooting* by Merrill Martin. This indicated that very accurate shooting was attainable using un-jacketed lead bullets by paying particular attention to obturation (gas sealing). The articles implied that the reason for the efficacy of a particular method of obturation were not known. I believe this view to be incorrect and in order to put the topic into perspective carried out a literature search: this showed that there were several methods of achieving satisfactory obturation which in most cases also gave satisfactory lubrication.

WORKING CONDITIONS

The working conditions for commercial ammunition with jacketed bullets are as follows:

gas pressure: 52,000 psi
gas temperature: 3,630 deg.K
sliding speed: 4,100 fps

The working conditions attained with lead alloy bullets are not so severe but this arises because of the shortcoming of available lubricants. As far as is known velocities have not exceeded 3,000 fps by any significant margin. Gas temperatures are necessarily the same but pressures lower in the order of 40,000 psi: there is very little quantitative data so this is an informed guess.

OBTURATION: FUNDAMENTALS

Mechanical seals

In this type of seal the leakage path is closed by the application of force such that the gap is effectively reduced to zero. The fundamental rule is that the load applied by a seal to its mating surface shall exceed that applied by fluid leaking through the gap to be sealed. Since the leak necessarily occurs from high to low pressure the pressure distribution is approximately triangular: if then the sealing load is applied by the pressure of the fluid to be sealed, say on a piston ring which gives a rectangular pressure distribution, then the sealing load is automatically higher than the load due to fluid leaking through the seal and the criterion is satisfied. Where the sealing member is elastic, such as a rubber "O" ring, the applied pressure is transmitted through the member as though it were a fluid and gives excellent sealing efficacy.

Controlled Clearance Seals

In this type of seal the leakage is controlled by deliberately manufacturing the sealing parts with a small clearance. Such technology is not directly applicable to guns as the heat transfer from leaking gas is so severe as to melt both bullet and bore wall. This principle can be used, however, if the seal is packed with a liquid of very high viscosity: that is grease.

It will be seen in what follows that due to the "set-up" of bullets during acceleration the actual method of sealing is often a mixture of the two basic types.

In the particular case of lead bullets an additional function of the obturator is that it protects the bullet base from melting by the high temperature gas and also from impact by propellant grains.

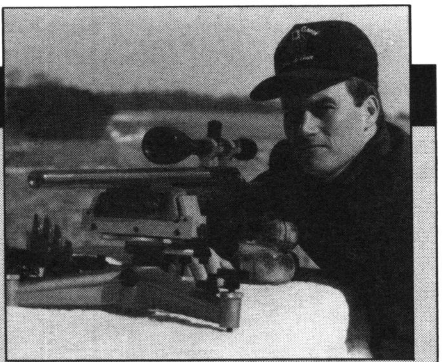
STATE OF THE ART

Full or Part Jacketed Bullets

It is well understood that the pressure in the lead core at the bullet base, as it is accelerated up the bore, is such as to "upset" the base forcing the jacket into the bottom of the rifling grooves. Since the lead core is behaving as a fluid the sealing criterion is met. However, this process requires to be carefully controlled as the bullet will tend to deform asymmetrically thereby degrading its intrinsic accuracy. This tendency is controlled by making the outside diameter of the bullet match the rifling groove diameter as closely as practicable. Excessive acceleration will make the unsupported ogive "slump" as well.

Gas Checked Bullets

Examining the geometry of an assembled gas check bullet shows that gas has access to the external surface of the cup and hence sealing can only be obtained by an initial interference fit with the rifling groove bottom. Its principal function is to protect the bullet base from the effects of the burning propellant. On the principles previously outlined it can be seen that it would be more effective if made an interference fit in the case neck with the cup towards the propellant.



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Common Lead Bullets

The standard method is to grease the bullet either all over or to apply grease in lubricant grooves only. Overall greasing is used for virtually all commercial ammunition of this type and it is necessary that the grease have a high melting point to avoid dirt adhering. Lubricant grooves are typical of privately reloaded ammunition. These methods of lubrication only permit velocities up to around 1500 fps; probably because the bullet base is directly exposed to the high temperature gas which melts, permitting blow-by and failure of the lubricant film.

A special requirement of the grease is that high temperature breakdown products should be neither abrasive nor toxic.

LEAD BULLETS: PRECIS FROM THE LITERATURE

Merrill Martin, Precision Shooting.

Uses wads made of "Poly-?" (some sort of plastic: probably polythene) or hard rubber of 90 degrees Durometer. Absolutely clear that gas cutting of the bullet follows if wad is omitted.

Cast Bullets: National Rifle Association of America

p.49 An effective seal and lubrication achieved by greasing the lubricant grooves in the normal way but, in addition, applying lubricant to the gas check rebate, no gas check being used.

p.51 Use of wadding formed from a tuft of kapok or Dacron. The latter later found to have shortcomings in that melted Dacron caused functioning problems in revolvers. In my view this trick works because the wadding, initially loose over the powder charge, is compressed against the bullet base and forms an effective seal because of the high degree of compression. In addition, the wadding holds the propellant firmly in position at the head end of the case and is found to give a marked improvement to the accuracy of the ammunition due to more regular ignition. Remark that ordinary wads not found to give improvements but context implies that cartridge is .30/60 and wads, almost certainly, used incorrectly. See later remarks on British military usage.

An alternate wadding used with partial success is oiled sawdust. This is effective except for scratching of the bore by hard particles accidentally mixed with the sawdust. Well known that some woods are very abrasive allegedly due to sand incorporated in the wood as the tree grows. Clearly some other particulate material selected with more care would be effective.

p.72 Paper patching forms an effective seal. The critical factors are that the patch be lubricated (grease plus Teflon for example) and that the bullet base be protected, either by twisting the end of the patch over the base or by a separate wad being used. Curiously, a grooved bullet body is essential to allow the patch to grip the bullet and allow the rifling to spin the assembly.

p.86. Use of wad comprising 1-1.5 gr. Dacron with 2-3 gr. lithium grease on top, with unlubricated grooved bullets found to be successful: both accurate and free from leading. Removal of grooves from bullet caused leading and inaccuracy. This illustrates the fact that full lubrication in a parallel clearance bearing only occurs when the bearing length is short in the direction of motion. It is relevant that grease was found on the muzzle after firing, showing that a grease film existed from leed to muzzle: undoubtedly, if insufficient grease were used to create such a continuous film then leading would follow. This is known to occur if an insufficient number of grooves are filled with lubricant with more conventional greasing of bullets

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p.86. Use of patch 3/4" square x 1/4" thick polyurethane foam as wad on top of powder in .30/06. Said to be more accurate than 1.5 gr. of kapok. Illustrates that practically any compressible material when crushed by the gas pressure will form an effective seal.

p.89. Reports that a patched bullet must be soft enough to upset and compress the paper patch into the rifling otherwise the bullet is not spun.

p.112. Reports ringing of bores when patch is not seated in contact with the bullet base. Clearly the wad acquires sufficient velocity to ring the bore when it collides with the bullet base: this is the normal result of a bore obstruction.

Treatise on Military Small Arms & Ammunition 1888; also: Treatise on the British Military Martini, B.A. Temple, L.D. Skennerton

Those references give detailed information on the construction of the M-H cartridge and its dimensional relation to the rifled bore. The wad is of beeswax and is held to close manufacturing tolerances: thickness is H .252/L .248, diameter is H .465/L .463. It has a .18 spherical depression .15 deep in the surface adjacent to the bullet. It is sandwiched between a pair of millboard discs. The groove diameter is .464 nominal diameter with the bore diameter held to a total variation of .002. It is clear that the wad is intended to be a close fit in the rifling groove. Its function is even more clearly identified as a gas seal by the phrase "a wad of beeswax cupped to the front to ensure its expanding in cold weather."

The bullet is beeswaxed paper patched without a full closure at the base this being provided by the separate wad.

It is absolutely clear that the detailed specification of this part of the bullet's construction is intended to prevent leading.

Textbook of Small Arms 1929

This reference is clear that wads have a combined gas sealing and lubricating function, and is incorporated in ammunition with either cordite or nitrocellulose propellants. It is a matter of common experience that the wad is a VERY tight fit in the case immediately under the bullet. The wad is inserted before the case is necked.

4th Edn. 7th Nov., 30th October 1989, Copyright Dr. A.B. Bailey

Loading Adjustments for Accuracy

Benchrest shooters in recent years have established procedures for wringing the best accuracy out of their rifles. There is an understanding that barrels of the very highest quality will shoot excellently without, and are insensitive to, group optimisation techniques. On the other hand, there is an implication that imperfect barrels can be persuaded to shoot, very accurately also, if only one can locate the optimum loading condition.

As far as I am aware U.K. riflemen are unaware of these methods which I have collected into these notes, and into which I have also added commentary aimed at giving an understanding of why the procedures are effective. The operational part of the notes are principally a synopsis taken from:

"The Best of Precision Shooting" Volume 1

and from:

"The Ultimate in Rifle Accuracy," by Glenn Newick, privately published, 1989.

No set order of carrying out the adjustments is indicated. The reader will speedily appreciate that some are much more easily implemented than others and the easiest to use is obviously the main adjustment. They are as follows:

1. Seating depth of the bullet in the case neck is set relative to a "just touching" condition on the leed.

It is apparent that this is difficult to determine due to the relatively soft material of bullet jackets and the small contact area on the lands in the leed. Most benchresters apparently start by jamming the bullet in the leed and observing the mark on the bullet which it is recommended be polished to facilitate examination. Soot from a flame is also used and I would think engineers' marking blue would also work well. I should point out that the jam condition is unlikely to be accurately reproducible due to variations in jacket hardness, and in shape of both ogive and lands. Seating depth is then progressively increased until the land contact mark is reduced to a shape the shooter thinks he can reproduce easily such as a square, or alternatively, the line of just touching. It is apparent that it is a great assistance for tool setting purposes to have a special gauge permitting the measurement of the length of the assembled round up to the land diameter of the bullet: for example, this may be readily made from an offcut of the user's barrel chambered with the user's chamber reamer.

Seating is then altered relative to the datum condition in increments of .055", or .010", to choice. The rifle is shot for group at each setting to locate the smallest group condition and smaller increments may be used for fine tuning. In the specific case of a rifle stated as having a bore "too big," a change in seating depth of .005" changed the group size from 1.0" to 0.1". The best group is variously found at .010 to .025 away from contact. Tests may be carried out up to .040 from just touching; the jam condition can also prove best. Powders well matched to the gun and bullet are insensitive to variations in seating depth.

2. After adjustment of seating depth at a powder charge likely to be correct, the charge weight is then adjusted to improve on the optimum already found. Charge increments of not greater than 1% are suggested. I think it likely that, for some rifles at least, it may be necessary to re-check the seating depth optimum after charge adjustment.

3. Neck tension may be altered by using alternative sizing bushings. It is clear, however, that neck tension is used as a preset condition around which the accuracy is optimised. It is apparent that a grip where the bullet may be seated by thumb pressure (abut 20 lbs.) is preferred to a tighter interference. This has to be seen in the context of reloading for benchrest rifles where the case neck clearance in the chamber may only be 0.001"; it is obvious that repeated reloading will lead to work-hardening of the brass which will alter the grip and that this trend may be minimised by the use of a minimum interference. It would appear that, apart from the increased working of the brass, there is no valid technical reason why a much heavier grip may not be used and this may explain why one may find crimped commercial brass whose accuracy is very difficult to replicate when using a reduced neck tension hold upon the bullet. It is taken as read in the benchrest context that the case has been neck turned to give uniform thickness to the neck wall; my experiments showed that where the neck is not turned it is impossible to obtain a neck which is round and accurately aligned. I also found that neck annealing was also necessary to obtain a neck which would actually turn round: this result may indicate non-uniform neck metallurgy originating in the factory and peculiar to the cases upon which I was experimenting. It is worth adding that cases which have not been neck turned will have eccentric bullets after assembly.

4. The powder burning rate also is not deliberately used as an adjustment parameter—or not unless one gets desperate! It is stated that slow burning powders like Dupont 4895 are accommodated by tight necks and with the bullet jammed into the rifling. Quicker powders like Dupont 4198 are managed with a gentle grip and some "jumping" of the bullet into the lands. It is specifically stated that powders as far apart in burning rate as 4198 and 4895 can be used as alternatives in the 6PPC by adjustment of the neck seating and fit as indicated.

5. The primer can be used as a coarse adjustment. One .243 Win. rifle burning Nobel Rifle 1 was changed from a 5" group to cloverleaf at 200 yds. by going from ordinary large rifle to magnum rifle primers. There is a strong belief in the USA that small rifle primers are more accurate than large rifle though the available grouping evidence fails the usual statistical tests. This may also be an effect merely due to changes in the initial burning rate depending upon the initial energy input at ignition. There is also a stated effect of improved accuracy with smaller than standard flashholes, which could also be interpreted as a change to the initial burning rate due to enhanced heat transfer to, or greater hot gas penetration through, the propellant.

6. One benchrest shooter used the procedure, prior to seating depth adjustment, of firing single rounds at the jam condition with slowly increasing charge and noting for subsequent study those regions where the elevation did not rise or fall with charge variation. This may sound rather improbably but I have never seen a rifle which did not show this effect on test.

7. Another shooter indicates that bullets with a "fat" pressure ring of at least .004" on .224 bullets are much less sensitive to seating depth alteration. He suggests that this may be because the bullet is better at self-alignment with the bore. An alternative explanation is that such a bullet will also be less sensitive to muzzle blast effects due to its different base shape.

8. It is apparent that it may be necessary to adjust the tuning during the course of a shoot.

In part, this is caused by air temperature changes altering the #bullet stability, and thus dispersion, this is compensated for by reducing charge, for increasing air temperature, by one or two increments of about 0.3 grains. It is very interesting that shoots carried out a very low temperature may result in a complete loss of bullet stability with groups of several minutes resulting.

In part, it appears that shooters may find a change in their optimum load, possibly due to the practice of reloading during a match. It seems that the group deterioration can be drastic, increasing to perhaps to well over 1 minute, and characterised by most of the increase in dispersion being in the vertical plane. This is corrected for by a similar small increase in charge or by seating the bullet .005" deeper into the case.

This sort of proceeding is possible due to the practice of reloading during the course of a match. This is perhaps not practicable in the U.K. scene but the published results do show, on occasion, an extraordinary sensitivity of the ammu-

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nition to non-optimum conditions. I cannot help wondering if this is indicative of a badly imperfect barrel.

Explanation

I have to state that there is a complete absence of ballistics laboratory level investigation of what is going on. It is stated that some procedures are carried out because it seems a "good thing" and are otherwise not proven—decreasing seating depth as the barrel erodes is in this category (0.004"/1000 rounds)—some shooters even thus adjust the seating depth every 50 rounds. It is necessary to do a lot of interpretation to obtain a tentative understanding of what is going on. It is notable that a number of shooters state their belief that each individual rifle shoots best at a particular "pressure." This is probably related to my own computer study finding that an optimum muzzle pressure exists which compensates for a large part of the misalignments arising in the bullet launching process.

Most shooters understand that the muzzle blast disturbs the bullet immediately after exit and that this gives a very small increase of muzzle velocity. What is also the case is that the bast changes the sideways velocity, angle of yaw and rate of yaw which the bullet will have from being imperfectly aligned with the bore when fired. The small initial bore misalignments will produce dispersion at the target due to their being considerably magnified by gyroscopic effects when the bullet interacts with the airstream. The effect of the muzzle blast will be to alter the small initial errors which can produce a reduction in group size or can act to enlarge it. Computer studies showed that, under blast optimised (but representative) conditions, group sizes of a few hundredths of a minute should be achieved.

Shooters also understand that impeding the movement of a bullet, at the time when it is about to start down the barrel, will increase the maximum pressure. This effect also speeds up the burning rate so that the muzzle pressure and blast is thereby reduced. All the adjustment options given have clearly identifiable effects upon the muzzle blast. In a given situation there is not, of course, any way of knowing without experiment whether the muzzle blast requires increasing or decreasing.

— END —

LETTER TO THE EDITOR

Ye old Editor (Letter to, article-whatever)

It seems everytime I read Precision Shooting everyone is boasting about how great your magazine is. On the contrary I have a few serious complaints.

1. When I open the pages I don't have all those little send in cards falling on out to cover up my dirty floor and spent primers.

2. Most of your writers have an equipment problem once in a while, other magazines writers never have a malfunction, their guns and equipment are superb and it sounds like they are better shots than we are.

3. Since I pretty well read *PS* cover to cover, I dug out a few old issues the other night. The September 80 issue had only 16 pages; you've come a long way since then.

I am currently working up a 223 load per the advice of some of our other shooting magazines. They advise me to try different cases, primers, powders and bullets with various seating depths; start with a light load and work up in half grain increments. A couple five shot groups oughta do it.

I'm on my way, I have primers (CC1-Winchester - Remington - Federal) cases; (Federal Winchester - Remington - Military) bullets, (Speer - Mosler - Hornady - Sierra) powder (IMR 4895 - W 748 - H 335 - IMR 3031) The bullet weights are 50, 55 and 60 grains; I'll seat them on the lands then back off in increments off .005" until I reach 020".

This project is taking a little longer than expected, primers (4) x cases (4) = 16, x bullets (4) = 64, x powders (4) = 256, x bullet grains (3) = 768, x seating depth (5) = 3840, x reduced load to maximum load (4) = 15.360, x two five shot groups (10) = 153,600. The project was started in March of 1983 and thus far I've shot 21,280 rounds. The project is static at the present time as I'm having a second new barrel installed but when I'm finished in about 2010 I'll send you a report; keep in mind though my ideal load may not shoot worth a damn in your 223.

Been thinking of writing Bob Mace, The Old Fart or Rick Kaiser to see if I could join them on a prairie dog hunt, but of late changed my mind. They shoot so far I'd have to buy a varmint license for three states.

Question for one of your experts. In my recent years I've worked up some pretty good loads primed with Remington #7$^1/_2$. The new Remington 7$^1/_2$ is a brass color instead of copper. Most loads remain pretty stable but in some the brass colored primer has really been negative?

For Gooder Groups
Arvil Jennings
Munitions Consulting
490 Century Drive
Toole, Utah 84074

Dear Dave,

I'm like so many others I took the .220 Russian brass for granted and when it disappeared I was caught with my pants down. I recently purchased 500 rounds of the new SAKO .22 PPC brass. During the preparation process I found that about 10% of the lot I had could not be trued for use in my rifle. I also had problems with the bases of the cases. They varied so much in the extractor groove area that they wouldn't fit the shell holders in my hand tools.

At any rate to make a long story short I developed a tool which I call the "Z" (zero tolerance) tool to true the base of cases so they can be used in my hand tools. The "Z" tool was designed to accomplish three tasks: (1) to true the concentricity of the rim (2) to true the rim thickness, and (3) to true the extractor groove. Enclosed are photos showing the tool and how it is used. I hope that some tool supplier will find it interesting enough to manufacture as it really works for me and I am not interested in manufacturing them myself. (The few shooters that have seen it are pestering me about making them one.)

As you can see the tool itself is fairly simple. It is comprised of a cutting head that slides up/down a shaft and milled slot which guides a cutter onto the shell.

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JOHN J. GAMMUTO
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A cap screw with a plastic press on knob provides the force needed to press the cutter into the brass. The cutter is a piece of 1/4 inch tool steel. One end is ground with a square nose and is used for concentricity cutting of the rim. The other end is ground to the shape of the extractor groove and is used to true the groove and rim thickness. The cutter is held in place by a set screw. (If I make another I will probably use two set screws as it is possible for the cutting tool to slip if too much pressure is placed on it.) I use my neck turner handle to turn the brass; however if light enough cuts are made it is possible to turn the case by hand.

The second part of the tool is the base which also contains an adjusting shaft which has been turned with a protrusion that fits the primer pocket of the case. The shell is placed on the end of the shaft and the top part of the tool (cutter) is lowered. The lineup of the cutting tool is controlled by screwing the shaft in or out. A set screw is used to lock the adjusting shaft in place after the tool is aligned.

I have also enclosed a drawing. As you can see I am not a machinist or draftsman, just a shooter who likes to make some of his own equipment. I hope that others will find the "Z" tool as useful as I have. I would imagine that it can be used for any case not just the PPC.

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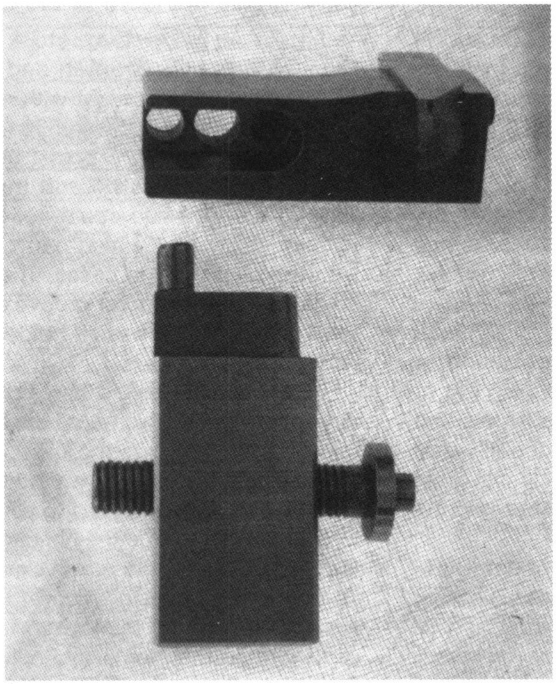

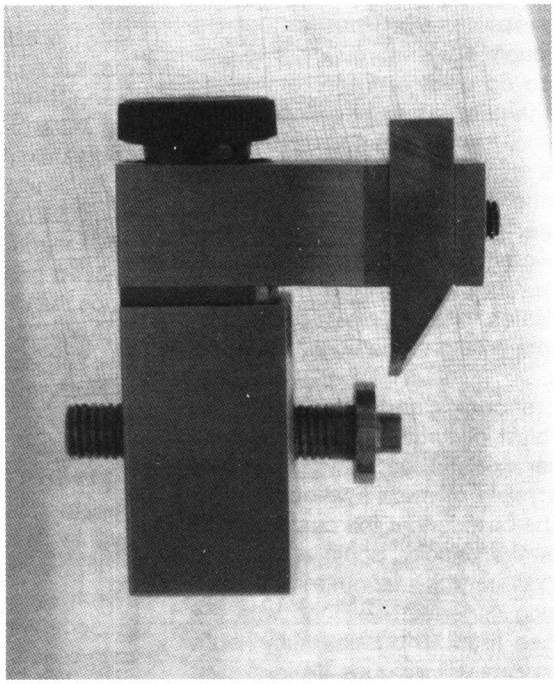

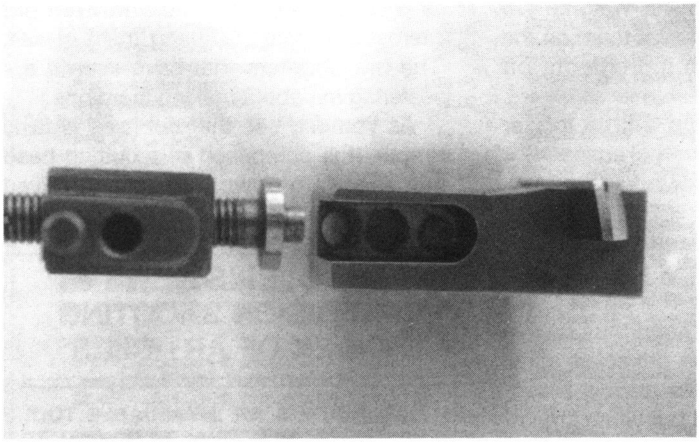

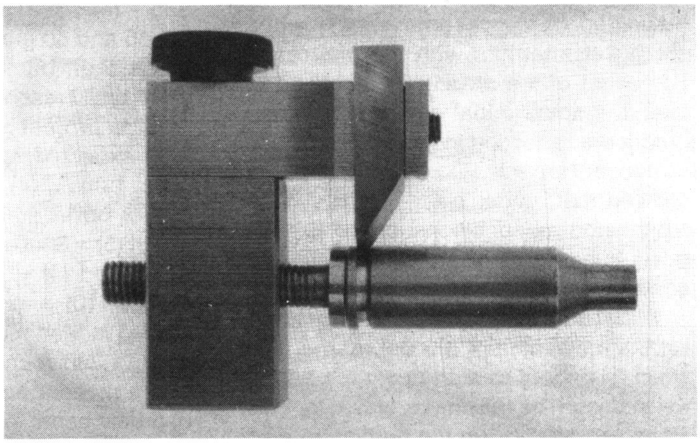

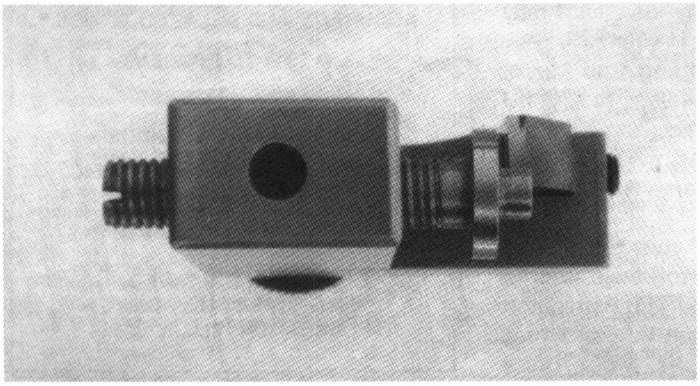

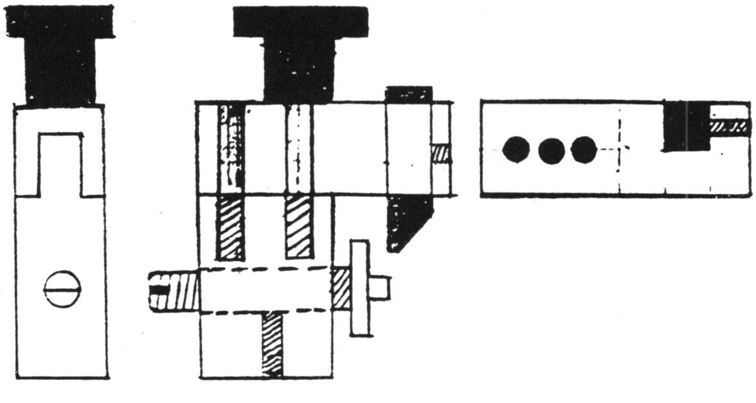

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MATCH DATA REPORT

CENTERFIRE......100 yards
RIMFIRE..........50 yards
AIR RIFLE........25 yards

DAVE BRENNAN: October 31, 1990

1990 was a rather eventful year in the world of BR-50, so I thought I'd better send you this "season wrap-up" in case you can use any of it. As always, when I include the details of our southern California activities, it's only to illustrate ONE WAY of going about it, not indicating it's the ONLY WAY, or "blowing our own horn" so to speak. It's just that everyone here is having such a great time that we wanna share this terrific system with other clubs who might benefit.

To start with, in July, BR-50 INTERNATIONAL came on line as the OFFICIAL World-Wide sanctioning body for the sport of 50-shot benchrest (BR-50). It has been burgeoning ever since because, as you recall, this game was designed to function without a beaurocracy. So BR-50 Intl. is essentially a record keeping system and rule making body aimed at keeping it simple. (It is amazing though, how many people seem to be threatened by this bright idea. Any opinions?) People anywhere can shoot BR-50 on their own home range and it counts for something.

Secondly, BR-50 was introduced to Europe via the Airgun contingent at the AIRGUNNERS AGAINST MUSCULAR DYSTROPHY 5-day, 5-event, International championship in Los Angeles in August. (There had already been considerable rimfire interest in Switzerland and France.) And prior to that a BRITISH BR-50 SHOOTERS ASSOCIATION had been founded at the Aldersley BR-50 Club in Wolverhampton, England. Also airgunners in Wales have caught on fire for this game, and for them to even consider a benchrest sport alongside their own beloved FIELD TARGET competition says plenty!

Here in the USA clubs are being formed, and activity has begun in Misourri, Texas, Indiana, Iowa, Kansas, Wisconsin, New York (NEW YORK CITY?!), California, and Montana that we know of. But that's not all. Existing organizations such as CASA, the CALIFORNIA AIRGUN SHOOTERS ASSOCIATION, have adopted BR-50 as an additional official competition in their programs.

So Dave, ya see, nobody knew going in that this game would be this popular this fast, and would transcend the supposed gulfs between centerfire, rimfire, and airgun as easily as it has. A fresh, new, non-parisitic organization was needed to grow along with the sport; to be part of the solution instead of part of the problem. So BR-50 INTERNATIONAL invites all shooters (NBRSA, IBS, NRA, NATO, or JOE LUNCHPAIL and even you, DOC!) who are seriously interested in the pursuit of excellence, to participate. There are no dues or fees to send in.

(Note, however, BR-50 was designed to be significantly more difficult than group shooting. A few competitors have found it to be......disheartening. Sorta like being pistol-whipped!)

Here at the BR-50 Club of Southern California our Championship Series concluded on Oct. 13 with the second annual TARGETECH OPEN. This double-champoint event is designed to finish-off the season with a BANG. It did! LARRY BROWN (me) won it for the second year in a row, picking up 20 champoints and as a result took AIRGUN BR-50 champ, and TOP-GUN overall for 1990. STAN HILL came from behind to become RIMFIRE BR-50 champion, and DAVE SCHNEIDER had already secured the top spot in CENTERFIRE division two matches earlier. Our championship series consists of nine matches, (ten in '91) one per month, and all three catagories compete against each other at their respective distances (centerfire-100yds, rimfire-50yds, airgun-25yds). The scores show that they ARE competitive this way. Where one finishes in the top-ten in a match determines how many "champoints" one earns; 10 for 1st place, 9 for 2nd, 8 for 3rd, etc, on down to 1 point for 10th place. (Ya gotta make the top-ten to get any.) And the points start at the top and work down so as to reward those who show up for the game as apposed to those who stay home. The champoints apply only to the catagory in which they were earned, ie: Rimfire points are not transferrable to Centerfire division. By the end of the season we have a Centerfire Champ, a Rimfire Champ, AND an Airgun Champ. We also have a separate award for the shooter amassing the most points overall, regardless of catagory, called the TOP-GUN AWARD. (Some of us like to switch catagories from one match to the next.) This keeps the multi-gun shooters from having an economic advantage toward the title in any particular division.

I've included a report on the last match, a listing of "THE DIRTY DOZEN" (top 12) of the series, and pictures of the TOP-FIVE finishers.

The 1991 Southern California BR-50 Championship Series will begin the first Saturday in January at 4pm, and consist of ten matches, one every fourth week, ending on September 14th. These will be OPEN to Rimfire and Airgun only (no Centerfire this year) due to proposed range remodeling and reconstruction. Anyone intrested in more BR-50 information is welcome to call Larry Brown at (619) 299-4455.

I thank you, sir, for your interest. I hope all is well with you and your family. May the Lord bless all of you this holiday season.

Sincerely,

Larry Brown
BR-50 Coordinator
BR-50 INTERNATIONAL

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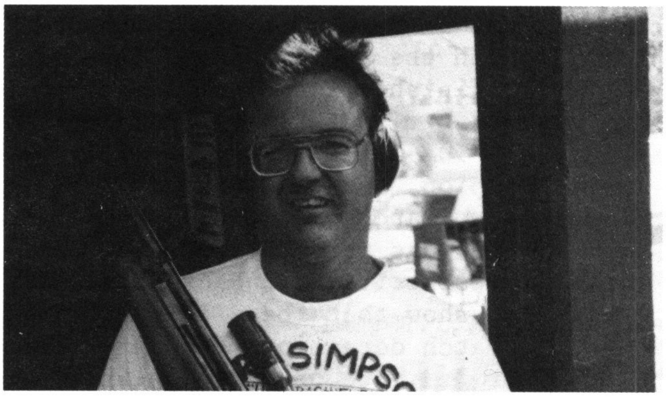
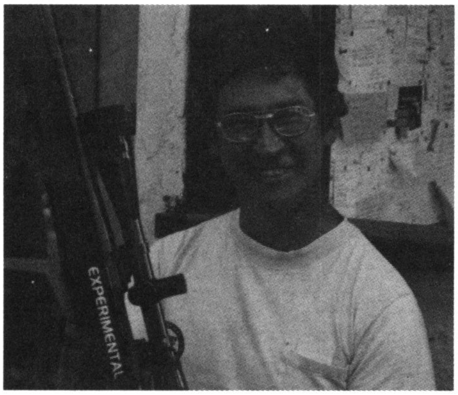
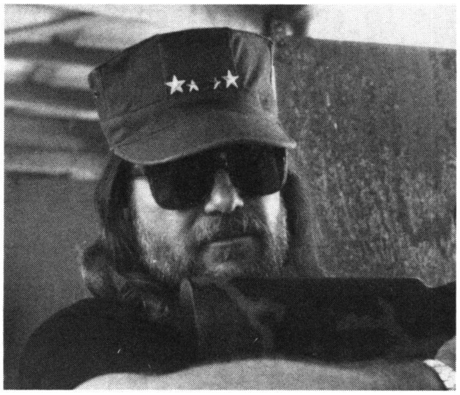
LARRY BROWN: TOP-GUN—71 Champoints
(1990 SoCal BR-50 AIRGUN Champion)
Centerfire—6pts/Rimfire—6pts/Airgun—59pts . . . took the Airgun title with TARGETECH ABR (Airgun Bench Rifle), a McMillan stocked SportsMatch GC2 under a 6-18 Bushnell. It likes H & N Barracuda, Beeman Kodiak, & Bisley Magnum ammo. Shot BR-50 Airgun World Record Match Agg. 4687.5625 in its very first match (9/8/90).



CHRIS DOLAN: #2 Overall—58 Champoints
Led airgun division all season with the exception of one month and was edged out of Airgun title by only one Champoint. Holds BR-50 Airgun HI-GRID World Record 526.875 with ultra-light FWB C60 (6 lb-10 oz). Made his own HOLLOW glass stock, cut off about 10" of barrel, and uses a pistol CO2 tank to achieve a +5.375% handicap percentage. (However, his front rest weighs 104 lbs.)



STAN HILL: #3 Overall—37 Champoints
(1990 SoCal BR-50 RIMFIRE Champion)
The only Rimfire shooter to ever break 4000 in California, Stan secured the Rimfire Championship by *one* point with a solid finish in the last match of the season. (3802.750) He shoots a TARGETECH EXP (custom 40X), B&L 36, and Lapua Master ammo.



RON BOORD: #4 Overall—56 Champoints
Ex 7th marine sniper, Boord, led his division the entire season until the last match, then got passed up by Hill to finish ONE point back at 56. He campaigned a TARGETECH WIN 52/Simmons 24 Gold Medal/Eley TENEX combo.

DAVE SCHNEIDER: (1990 SoCal BR50 CENTERFIRE CHAMPION)
His 36 points clinched Centerfire division with two matches to go, so he switched to Airgun and picked up 16 more to finish 5th overall with 52 Champoints. Took Centerfire crown with Jarrett-Stolle 6PPC/30 Leu-Prem/Hart/Berger 68 combination. REAL CLASS!

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BOYD MACE

Got a letter from my mother, who occasionally reads my column. She doesn't read it all the time because she objects to my use of "coarse language." Specifically she objects to Joe Kelly's nickname "The Old Fart." Said she found "Fart" offensive. Indeed she recommended calling him the Old TOAD. She might have a point there. On occasion I have found him offensive myself, but of course she was referring only to his nickname since she has never met him and has not had my experience with his eccentric habits.

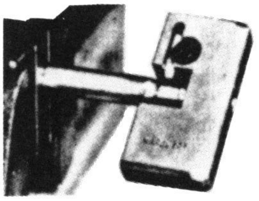
Speaking of the Old Toad, er . . . Fart (Goat?) he recently sent his 257 Improved down to Ray Montgomery in Grand Junction, Colorado for a new Hart barrel. When Ray pulled the thing apart he found the locking lugs had set back considerably. Ray checked the hardness of the ancient Mauser action and discovered it was soft, dangerously so. Scratch one action. Glad to see this was one gunsmith on the ball. Kelly is wedded to Mausers so he ordered up a singleshot Mark X which Ray cleaned up and trued.

Initial testing of the new Hart barrel and Mauser action indicates it wants to shoot. We saw a few groups in the quarter inch range when McCluskey 85 grain bullets were pushed at 3650 fps using IMR4831. More testing will have to wait until spring when the Wyoming weather becomes more cooperative.

Merrill Martin has written about indexing cases in past issues. I had some correspondence with him and he convinced me to try it. Setting up a "calibrated nail" with a dial indicator took only a few minutes. I was surprised to find variations up to .010 wall thickness in some of my cases. I marked a few on the thin side and tested them. My groups tightened up considerably and fliers no longer appeared. Very interesting. I was curious as to whether or not the cases would stay oriented correctly when the bolt was closed but they always came out the same as they were chambered, notch up. The theory behind this is that the case will bend away from the thin side when it is fired. This apparently happens quickly enough that bullets can be tipped to one side before they clear the case neck. Orienting the thin side on each case in the same direction (straight up is easiest) will insure that all bullets will be tipped in the same direction.

Out of curiosity I checked some of my PPC brass (220 Russian) and found the same variations in wall thickness. I suspect that since the PPC is so short this bending effect is minimal. On a long varmint caliber case the bending is much more severe. It does take some time to check and notch cases when we are talking about maybe 100-200 in each caliber in our gun racks but I suspect I will be done before I head to Idaho this spring to match wits with Rich Kayser and the rockchucks.

For those interested in the long range possibilities of hot .22 caliber cartridges JLK Bullets at 5 Wood Duck Lane, Russellville, Arkansas 72801 is making .22 cal. VLD bullets in 70, 75 and 80 grain weights. I believe the bullets were designed by Bill Davis. Ballistically, the bullets look very impressive at extremely long range. Obviously these bullets are going to require a fast twist. Contact Jimmy at the above address for more information.



Turn case necks uniform within .0001

with this Marquart Neck Turning Tool — pilot diameters from .17 to .30 caliber. We specialize in rebarreling and conversions — and CUT-RIFLED barrels, 7mm to .45 caliber. Marquart Precision Co.; Box 1740; Prescott, AZ 86302; (602) 445-5646

I have had several conversations with Dan Lilja and other gunsmiths as to the proper twist for the upcoming 85-90 grain .25 caliber bullets. Dan told me a 14 twist is ideal while others said a 12 would be appropriate. Needless to say I was confused. Dan sent me a computer printout to prove his point, and convinced me. Dan's program was written by Bill Davis. Bill's friend Bob McCoy did the original work in developing the model for the program. Turns out that the proper twist has a relationship to the altitude at which you are shooting, something that had never occurred to me. At my altitude (6280 feet) the 14 twist is perfect. Dan kindly gave me permission to reprint that computer generated printout in *PS*. According to Dan a stability factor (SG) of 1.5 is considered ideal. You will note that the SG increases as the bullet slows down at long range, thus the bullet becomes even more stable. This printout is based on the 88 grain McCluskey bullet. Upcoming bullets from our other custom bullet makers are expected to be similar so the twist projections should be valid for those also. However, we will have to wait until we have the bullets in our hands to be sure. It is possible that a 13 twist will be needed at sea level. If so Dan says he will produce them. Many thanks to Dan Lilja for clearing up my confusion on this. Hopefully it also answers the questions of others.

A few days ago I sent Dan a Remington action to sleeve and chamber in .257 Improved using one of his barrels, 28 inches and fluted in heavy varmint taper. I dilly-dallied all summer and fall trying to make up my mind as to what cartridge I wanted to use and finally decided the .257 Improved best suited my purposes. For this one I am going to use necked down RWS 7MM Mauser brass. The .257 Roberts started life as a necked down 7MM Mauser so the necking down and fireforming process to make .257 Improved cases is relatively easy. I have used 7MM Mauser brass to make 6MM Rem. cases with good results. You can also use this method to end up with thicker necks after neckturning for use in SAMMI chambers.

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```
38 GR McCLUSKEY

BULLET CONSTRUCTION:     JACKETED HOLLOW-POINT, FLAT BASE

BULLET WEIGHT (GRAINS): 88          SECT. DENS. (LB/IN^2):   .190
BULLET DIAMETER (INCH): .257        BULLET LENGTH (INCH):    0.915
OGIVE LENGTH (INCH):    .684        MEPLAT DIAMETER (INCH):  0.050
OGIVE SHAPE:            TANGENT     OGIVE RADIUS (CAL):      9.00

NON-STANDARD ATMOSPHERE:
TEMP (DEG-F):           70          ALTITUDE (FT):           5000
REL HUMIDITY (PCT):     20          BAROM PRESS (INS Hg):    24.47
REL SONIC VEL (RATIO):  1.011       REL ATM DENSITY (ICAO):  0.799

  * * * ESTIMATED GYROSCOPIC STABILITY FACTOR AT MUZZLE * * *
            FOR A RIFLING TWIST OF 14.00 INCHES/TURN

MUZZLE         MUZZLE          STABILITY       TWIST IN
VELOCITY       VELOCITY        FACTOR          INCHES/TURN
MACH NR.       FT/SEC           (SG)           FOR SG=1.5

0.45            500            1.97            16.1
0.54            600            1.96            16.0
0.63            700            1.95            16.0
0.72            800            1.92            15.8
0.81            900            1.87            15.6
0.91           1000            1.78            15.2
1.00           1100            1.46            13.8
1.09           1200            1.91            15.8
1.18           1300            1.92            15.8
1.27           1400            1.95            16.0
1.36           1500            1.98            16.1
1.45           1600            2.01            16.2
1.54           1700            2.03            16.3
1.63           1800            2.06            16.4
1.72           1900            2.08            16.5
1.81           2000            2.10            16.5
1.90           2100            2.11            16.6
1.99           2200            2.13            16.7
2.08           2300            2.14            16.7
2.17           2400            2.15            16.8
2.26           2500            2.16            16.8
2.35           2600            2.17            16.8
2.44           2700            2.18            16.9
2.54           2800            2.19            16.9
2.63           2900            2.20            16.9
2.72           3000            2.20            17.0
2.81           3100            2.21            17.0
2.90           3200            2.22            17.0
2.99           3300            2.22            17.1
3.08           3400            2.23            17.1
3.17           3500            2.24            17.1
3.26           3600            2.24            17.1
3.35           3700            2.25            17.1
3.44           3800            2.25            17.2
3.53           3900            2.26            17.2
3.62           4000            2.26            17.2
4.07           4500            2.28            17.3
4.53           5000            2.30            17.3
```

Courtesy of Dan Lilja

```
88 GR McCLUSKEY

BULLET CONSTRUCTION:     JACKETED HOLLOW-POINT, FLAT BASE

BULLET WEIGHT (GRAINS): 88          SECT. DENS. (LB/IN^2):   .190
BULLET DIAMETER (INCH): .257        BULLET LENGTH (INCH):    0.915
OGIVE LENGTH (INCH):    .684        MEPLAT DIAMETER (INCH): 0.050
OGIVE SHAPE:            TANGENT     OGIVE RADIUS.(CAL):      9.00

STANDARD METRO SEA-LEVEL ATMOSPHERE

 * * * ESTIMATED GYROSCOPIC STABILITY FACTOR AT MUZZLE * * *
          FOR A RIFLING TWIST OF 14.00 INCHES/TURN

MUZZLE         MUZZLE          STABILITY       TWIST IN
VELOCITY       VELOCITY        FACTOR          INCHES/TURN
MACH NR.       FT/SEC           (SG)           FOR SG=1.5

0.45            500            1.31            13.1
0.54            600            1.30            13.0
0.63            700            1.29            13.0
0.72            800            1.27            12.9
0.81            900            1.24            12.7
0.90           1000            1.19            12.4
0.99           1100            1.03            11.6
1.08           1200            1.27            12.9
1.16           1300            1.27            12.9
1.25           1400            1.29            13.0
1.34           1500            1.31            13.1
1.43           1600            1.33            13.2
1.52           1700            1.34            13.3
1.61           1800            1.36            13.3
1.70           1900            1.37            13.4
1.79           2000            1.38            13.5
1.88           2100            1.40            13.5
1.97           2200            1.41            13.6
2.06           2300            1.41            13.6
2.15           2400            1.42            13.6
2.24           2500            1.43            13.7
2.33           2600            1.44            13.7
2.42           2700            1.44            13.7
2.51           2800            1.45            13.8
2.60           2900            1.45            13.8
2.69           3000            1.46            13.8
2.78           3100            1.46            13.8
2.87           3200            1.47            13.8
2.96           3300            1.47            13.9
3.05           3400            1.48            13.9
3.14           3500            1.48            13.9
3.23           3600            1.48            13.9
3.32           3700            1.49            13.9
3.41           3800            1.49            14.0
3.49           3900            1.49            14.0
3.58           4000            1.50            14.0
4.03           4500            1.51            14.0
4.48           5000            1.52            14.1
```

Courtesy of Dan Lilja

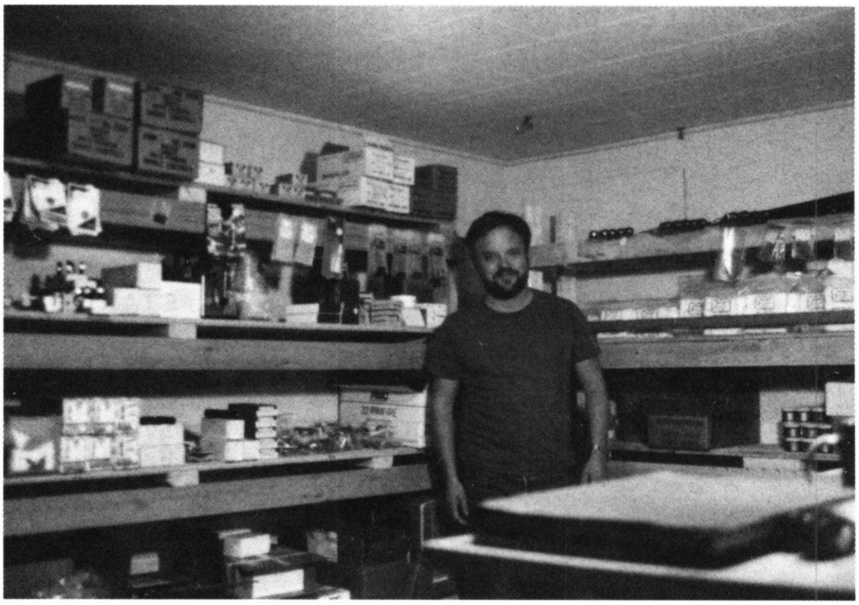
PACIFIC NORTHWEST PROFILES:

by

Rich Kayser

RUSS HAYDON'S SHOOTERS' SUPPLY

Tacoma Washington



Russ Haydon shown with part of the inventory at his shop. A rather complete line of shooting accessories.

I mentioned elsewhere this issue that I had the opportunity to visit one of the new advertisers, Russ Haydon the last weekend of October. This article covers some of the conversation I had with Russ and a little of the background on the man and his dream.

Russ Haydon's Shooters' Supply in Tacoma, Washington, came about as a result of Russ' not being able to buy the precision accessories he needed locally. I spent a couple hours with Russ, talking about the business and how it started. "I got tired of the 5-day wait for the UPS truck everytime I needed anything."

Russ talked about getting into smallbore rifle competition: "My original interests growing up were hunting and trapping along the Columbia River. After I got married about eleven years ago and moved to Tacoma, places to hunt or trap were pretty much non-existent, so I started the league shooting with .22's."

"My first taste of big time shooting came at the preliminary tryouts for the United States International Shooting Team in spring of 1981. I wasn't ready for the intensity then, and did poorly. I practiced all that summer, went back that fall and won the meet. I have competed in the U.S. International Shooting Team tryouts 7 of the last 10 years. The highlight was in 1984 when the tryouts were to select the team that represents our country in the Olympics. I have managed to set a few Oregon State Smallbore records over the past several years, and anchored the 1986 three-man team that set a national record in International Air Rifle competition. It stood as the Civilian National Team Record for quite a while."

Russ has also been invited to the USOTC (US Olympic Training Center) Masters Camp in Colorado Springs, Colorado, for training by "Der Wigger." "Spending that two weeks learning from Lones Wigger really did a lot for my rifle shooting. The mental preparation that Wigger stresses has helped me tremendously."

These days smallbore is beginning to take a backseat to his two sons Rhys, 5 and Robbie, 1, and to his new shooting interests. "I met this guy Kostanich last year, and he got me interested in Benchrest. To be competitive in smallbore you need to practice at least three nights a week, and I wanted to spend time with my wife and family. Benchrest lets me do that, and still shoot a lot." Russ ended up with two 10½ pound rifles last year, and is looking at Hunter Class.

He has adapted the Benchrest technology to his position shooting as well. "Steve (Kostanich) is rebuilding my 'free rifle' to utilize all the BR tricks. It will be a Hunter/Varmint hybrid in a position stock, and I expect to be much more competitive as a result."

Russ decided to take the plunge into the mailorder/retail business last November, and wrote to Fred Sinclair and a few others in the industry. "I cannot tell you how much I owe to Fred, he always has time to talk about problems I have, and has given me good advice."

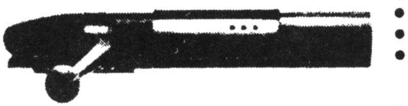
"I am still at Boeing. I work as a draftsman, but the business is growing enough that I may be forced to leave there soon to devote all of my time to Shooters' Supply."

I know Russ would miss the one hour each way commute, but I hope he has to give it up soon. When Russ showed me his shop, I was surprised at the size and scope of his inventory. Dozens of Dewey cleaning rods, over 100 Wilson dies, cases of the popular cleaning solvents, over 50,000 pieces of rifle brass including both 6mm and 7mm BR and the Sako PPC-USA brass so in demand. Federal, CCI, and Rem. BR primers, about half a million cleaning patches, and crates of .22LR target ammunition. Everything a bench rester or other accuracy shooter/competitor might need is on the shelves at Russ' place. "I handle the Anschutz rifle and accessory line, and deal in used rifles and actions." Russ has one of the largest collections of Winchester Model 52's in the Pacific Northwest area, and is constantly on the lookout for clean specimens to add to his hoard. Russ had one request when I visited with him, "Don't put that part about wanting to buy more 52's in the article, I told my wife I wasn't going to buy any more, just trade a little to upgrade."

Don't worry Russ, where journalistic integrity is concerned I am world famous for my uprightness, honesty and sincerity. Your secret is safe with me and the *PS* readership.

The ad Russ runs in *PS* is fairly comprehensive, but doesn't show all of the odds and ends he stocks. He has a four page flier that covers the rest of his inventory, that is available for a SASE. I got a copy while I was there, along with a number of things I needed for the Banshee break-in and testing.

Russ Haydon's Shooters' Supply in Tacoma, Washington, offers a full line of quality products at competitive prices. Besides that, it is owned and operated by a fellow benchrest shooter. We could use a few more like him. Actually, we could use a lot more like him.



THE WICHITA WBR 1375
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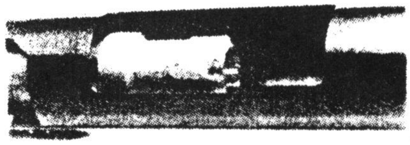

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Case Holder - specify cartridge	4.35
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Straight Line Seater	28.85
Extra Top Assembly for seater - specify caliber	12.25
Neck Sizer Die less bushing	28.95
Bushing - specify size	7.00

SINCLAIR

Primer Pocket Uniformer, carbide	32.50
Deluxe Flash Hole Deburring Tool	15.75
PPC Flash Hole Deburring Tool	15.00
Neck Turning Tool, dual caliber - .22 & 6mm, .25 & .270, or 7mm & 30	56.50
Mandrel, dual calibers as above	9.50
Mandrel, single .17, 6.5 or .338	8.50
Comparator - 6 cals .224, .243, .257, .277, .284, or .308	11.25
Scope Ring Lapping Kit, 1"	13.95
Chamber Plug - specify cartridge	8.95
Arbor Press	63.00
Cleaning Rod Guides - REM 700, WIN 70, or Ruger 77, .22-6.5 & .270 & up	11.95
Power Primer Pocket Uniformer, carbide, small or large	13.50
Neck Expander, same calibers as dual mandrels	22.25
same as single caliber mandrels	21.95

DEWEY MFG.
Nylon coated Rods complete with jag & brush adapter. (Jag only with .17 as no adaper required.)

.17 x 26"	19.50
.17 x 36"	21.50
.22 x 36"	19.95
.22 x 44"	20.15
.270 & up x 36"	20.50
.270 & up x 44"	21.15

Deduct $2.25 for .17 rod without jag, $4.50 for all other rods without jag & adapter.

6mm Jag for .22 rod	2.35
.17 Brass Core Bronze Brush	$1.15 ea.

Please send payment with order. Include ample shipping; overpayment will be refunded. All orders shipped UPS. Washington residents add 7.8% sales tax. Prices subject to change without notice. Limited number of used items available. SASE for complete price list.

PRO-SHOT
100% Cotton Flannel Patches

3/4" square 17 & 22 caliber	$3.75/500
1-1/8" square 22 cal. centerfire	3.75/500
1-3/8" square 6mm centerfire	4.00/500
1-3/4" square 6mm thru 30 caliber	5.00/500
2" round 30 thru 38 caliber	5.50/500
2-1/4" square 38 thru 45 pistol	8.00/500
Brushes, brass core with bronze bristles - .22 RF, .22 CF, 6mm, .25, .264, 7mm, .30, .338, .375, & .45 rifle; and .22, .38 & .45 pistol	$1.00 ea., $9.25/dozen
Bore Mops, brass core - .22, .24/27, .30/35, .38 & .45	$1.00 ea., $9.00/dozen

TULLER/PROTEKTOR SAND BAGS

No. 1 front hunting rifle	8.95
No. 2 front, 2½" wide forearm	8.95
No. 3 front, 3" wide forearm	8.95
Front Squeeze Bag	7.95
Rear Bag - specify bunny or rabbit ears	12.25
Bolt Holster	7.95
Brick Bag for elbow comfort	7.75

WHITETAIL DESIGN

Carbide Cutter for Wilson Trimmer	29.00
Lifetime Primer Pocket Cleaner, large or small	12.00
Match Prep Primer Pocket Uniformer, carbide - small rifle/pistol or large rifle	22.00

DAVIDSON

REM 600, Short 700 or 722 Single Shot Adapter - specify with or without tip-up (.222, PPC size requires tip-up)	6.00
REM 700 or 721 Single Shot Adapter	6.00
REM 700, 721, 722 Bolt Shroud, aluminum	11.50
hard anodized, black	13.00
Bullet Puller, plier type (not for crimped-in bullets) .22 & 6mm	12.50
.22, 6mm & .308	13.50
Barrel Vise for switch barrel rifle	36.00
Loading Port Wrench for above Remington, Shilen and most Mausers; Hall or Stolle (call for avail.)	32.00
Mainspring Changing Tool	11.50

SOLVENTS & OILS

Accubore, 4 oz.	5.95
Hoppes #9, 2 oz.	1.75
Hoppes Bench Rest, 4 oz.	5.50
Hoppes Bench Rest, 16 oz.	14.75

SOLVENTS & OILS

Pro-Shot Copper Solvent, 4 oz.	$ 5.50
Pro-Shot Copper Solvent, 16 oz.	16.00
Shooters Choice, 2 oz., hand dropper bottle	3.10
Shooters Choice, 4 oz.	4.25
Shooters Choice, 16 oz.	13.75
Shooters Choice Rust Preventative Spray	2.85
Sweets 7.62, 8 oz.	6.50

WOLFF GUN SPRINGS - 2 types
Replacement springs for weakened spring, provide approx. 15% extra power. Recommend gunsmith replacement.

Anschutz 54/1400 series (wing safety)	7.20
Remington 37	7.20
Remington 540 & 580 series	7.20
Winchester 52, all series	7.20

Blitzschnell precision speedlock, ready for installation.

Anschutz 1800/1900 - 2 spring	8.95
Hall benchrest	7.20
Remington 700 short, 722	7.20
Remington 600-XP100	7.20
Winchester 70, all series & cal. except .22 Hornet	7.20

BENCHREST ITEMS

Acra-Gel	9.25
Acra-Gel with aluminum filler	12.50
Micro-Bed	8.00
Bushnell Bore Sighter	53.95
Adjustable Arbor for Bushnell Bore Sighter - specify .22-.270 or 7mm-.35	12.95
Bushnell Rings with windage	12.95
Chapman Screwdriver Kit	22.95
Loctite	6.50
Ear Plugs	3/1.00
K&M Flash Hole Uniformer, standard or PPC	9.50
Lee Auto-Prime, 2 trays	13.75
Shell Holder for Lee Auto-Prime - specify cart.	2.75
Redding 3BR Powder Measure	67.50
Shilen 2 oz. Trigger	87.95
Mirage Shade, mylar	2.95
7BR REM cases	6.20/20
6 PPC Sako USA	.81 ea.
Federal Nickel .222 Cases	6.75
Federal Nickel .308 Cases	8.50

Brass available in other calibers at discount prices — please call.

Federal 205M, 210M	$21.50/1000
Remington 7½, CCI BR-2, BR-4 primers	$18.95/1000

1990 BENCHREST SHOOTING ALL STARS

Don Neilson edges out Tony Boyer for the 1990 crown.

Don Neilson, a California based shooter, nosed out Tony Boyer to take top honors in the 1990 competition. If a shooter wants to win this one, which had a total of 13 "designated tournaments" for 1990, he had better plan on doing a bit of traveling. We note that Mr. Neilson picked up points in 6 of those 13 matches. Tony Boyer had points in 5 matches. George Kelbly must have picked up a few saddle blisters; he made 7 of the 13 matches, and that seems to be the 1990 winner of the "sheer determination" subdivision. Several shooters made 5 of the matches . . . and that is probably the point where several spouses began to use the dreaded D-word (Read: Divorce Court).

1990
BENCHREST SHOOTING ALL STARS

10/31/9

NAME	PLACE	POINT TOTAL	CACTUS CLASSIC	CRAWFISH INVIT.	SUPER SHOOT	IBS NAT.	NBRSA NAT	TACOMA WASH.	SAINT LOUIS	BOONE CO.	KANSAS CITY	HOLTON MICH.	STRANGE DUCK	IBS 200/300	SOUTH CREEK
NEILSON, D	1	1731	166	0	0	368	460	195	182	0	195	165	0	0	0
BOYER, T	2	1723	*	0	431	424	477	0	0	0	0	0	196	195	0
BRUNO, L	3	1691	313	0	*	441	479	0	0	0	0	0	141	176	141
HOEHN, R	4	1665	0	0	462	401	449	0	188	0	165	0	0	0	0
KELBLY, G Sr	5	1575	*	0	267	326	322	0	160	0	188	174	138	0	0
GENTNER, D	6	1564	209	0	0	464	359	0	0	0	0	0	158	180	194
HENSLEY, S	7	1481	264	0	424	442	0	0	0	0	0	0	170	181	0
WATSON, E	8	1412	0	0	374	424	442	0	0	172	0	0	0	0	0
BERGER, W	9	1411	*	0	410	301	354	0	175	0	171	0	0	0	0
BOYER, F	10	1386	234	0	369	*	439	0	0	0	0	0	181	163	0
HAMMONDS, C	11	1381	0	0	380	463	455	0	0	0	0	0	83	0	0
DEVILIEGHER, B	12	1373	0	0	464	421	0	0	0	0	0	0	186	167	135
FREI, L	13	1369	0	0	471	411	487	0	0	0	0	0	0	0	0
HASECUSTER, F	14	1310	*	0	339	379	230	0	0	0	0	193	0	169	0
BRAWAND, B	15	1304	0	0	276	275	278	0	0	0	0	0	141	182	152
ROSENTHAL, B	16	1303	147	0	441	348	0	0	177	0	190	0	0	0	0
CANTWELL, T	17	1294	0	0	381	366	201	0	188	0	158	0	0	0	0
OTTO, S	18	1284	0	0	238	311	351	191	0	0	193	0	0	0	0
SUTTON JACK	19	1261	178	0	351	*	267	0	0	0	0	0	158	177	130
POWELL, D	20	1252	233	0	444	380	0	0	0	195	0	0	0	0	0
BOOP, R	21	1224	226	0	196	345	0	0	0	0	0	0	133	164	160
WHITE, BOB	22	1217	0	0	365	337	0	0	0	0	0	0	174	171	170
ENGLEBRECHT, L	23	1191	185	0	467	0	358	0	0	0	181	0	0	0	0
RENEAU, R	24	1190	281	0	446	0	463	0	0	0	0	0	0	0	0
HUCKEBA, C	25	1184	348	0	429	0	407	0	0	0	0	0	0	0	0
GAMMUTO, J	26	1168	0	0	389	295	0	0	172	0	172	140	0	0	0
BERGER, E	27	1161	*	0	281	295	253	0	158	0	174	0	0	0	0
SCHARNHORST, L	28	1135	223	158	0	418	0	0	151	0	185	0	0	0	0
ANDREWS, L	29	1090	303	0	0	343	444	0	0	0	0	0	0	0	0
VALENTINE, J	30	1075	0	0	410	315	350	0	0	0	0	0	0	0	0
O'COCK, G	31	1047	315	0	0	0	348	0	0	0	0	0	0	191	193
EUBER, ALAN	32	1044	0	0	463	409	0	0	0	0	0	0	0	172	0
JOHNSON, P	33	1043	0	157	431	274	0	0	0	0	0	181	0	0	0
NEWICK, G	34	1039	0	*	352	399	288	0	0	0	0	0	0	0	0
LILJA, D	35	1028	0	182	0	297	354	195	0	0	0	0	0	0	0
MILLER, C	36	1021	231	0	398	0	392	0	0	0	0	0	0	0	0
BAGGETT, L	37	1014	305	*	395	0	314	0	0	0	0	0	0	0	0
FAZIO, BILL	38	983	236	0	275	0	292	0	180	0	0	0	0	0	0
DAVIDSON, A	39	980	*	149	347	0	304	0	0	0	180	0	0	0	0
DILL, R	40	979	0	0	418	252	0	0	0	139	0	0	170	0	0
MORTON, P	41	977	0	0	438	256	0	0	0	0	0	92	0	191	0
WAGNER, D	42	966	281	0	325	0	360	0	0	0	0	0	0	0	0

TUCKER, C	43	961	289	0	364	0	308	0	0	0	0	0	0	0	0
BRUNET, R	44	959	0	208	0	353	398	0	0	0	0	0	0	0	0
OLIVER, JIM	45	953	0	0	366	232	0	0	0	0	0	0	0	173	182
BULLOCH, B	46	936	263	0	447	0	226	0	0	0	0	0	0	0	0
MURDICA, L	47	932	0	0	305	262	365	0	0	0	0	0	0	0	0
BROWN, J Jr	48	931	0	0	410	320	0	0	0	0	0	0	53	148	0
FORYS, G	49	923	0	189	0	371	0	0	190	0	173	0	0	0	0
GRIFFIN, R	50	917	250	0	251	244	0	0	172	0	0	0	0	0	0
HARRISON, G	51	902	245	0	310	0	347	0	0	0	0	0	0	0	0
EUBER, LEE	52	875	0	0	430	445	0	0	0	0	0	0	0	0	0
MARETZO, R	53	873	129	135	351	0	0	0	0	0	0	0	89	169	0
BAKER, R	54	862	0	0	291	212	215	0	0	0	0	0	0	144	0
VINCENT, G	55	862	0	128	337	0	397	0	0	0	0	0	0	0	0
FEDOROWICH, J	56	855	0	0	402	289	0	0	0	0	0	164	0	0	0
BUCHTEL, S	57	853	240	0	382	0	231	0	0	0	0	0	0	0	0
GARCIA, M	58	848	227	0	261	298	0	0	0	0	0	0	62	0	0
DAUGHERTY, D	59	837	0	0	296	366	0	0	0	175	0	0	0	0	0
BERNARD, J	60	827	0	0	337	186	0	0	0	0	0	158	0	146	0
JANSEN, K	61	824	203	*	334	0	178	0	0	0	0	0	109	0	0
JONES, DON	62	819	0	0	343	316	0	0	0	0	0	0	160	0	0
PERIA, T Sr	63	806	0	0	302	0	0	0	0	0	0	0	174	187	143
CONAWAY, GARY	64	805	0	0	393	412	0	0	0	0	0	0	0	0	0
SCOTT, DWIGHT	65	796	0	*	198	236	362	0	0	0	0	0	0	0	0
HOTTENSTEIN, L	66	778	0	0	267	347	0	0	0	0	0	164	0	0	0
BEAVER, P	67	773	0	0	242	206	0	0	0	0	0	0	163	0	162
MUNDY, B	68	772	148	148	0	0	157	0	145	0	174	0	0	0	0
MELTON, K	69	765	0	0	278	291	0	0	0	196	0	0	0	0	0
BORDEN, JIM	70	763	0	0	459	131	0	0	0	0	0	0	0	0	173
MULHALL, D	71	746	125	0	341	0	280	0	0	0	0	0	0	0	0
GONZALEZ, T	72	743	0	0	378	0	365	0	0	0	0	0	0	0	0
LOCKWOOD, R	73	741	0	0	86	355	0	0	0	0	0	0	141	0	159
ORR, DeWAYNE	74	740	136	0	321	130	0	0	0	0	153	0	0	0	0
WILSON, T	75	739	226	159	0	0	354	0	0	0	0	0	0	0	0
DOWLING, DAN	76	729	281	0	0	0	448	0	0	0	0	0	0	0	0
WHITE, ENDA	77	721	0	0	207	202	0	0	0	0	0	0	127	53	132
MITCHELL, P	78	712	0	108	436	0	0	0	0	0	0	0	0	168	0
GAMMON, B	79	711	0	0	313	86	0	0	0	0	0	157	0	155	0
RUBRIGHT, B	80	703	0	0	312	147	0	0	0	0	0	0	103	141	0
SKIVER, A	81	692	0	0	220	264	0	0	0	0	0	0	51	0	157
ROWLEY, B	82	687	0	0	172	165	0	0	0	0	0	0	185	165	0
HUBBARD, M	83	685	145	0	185	0	0	0	168	0	187	0	0	0	0
MORGAN, H	84	685	0	213	287	0	0	0	0	185	0	0	0	0	0
SAUER, PHIL	85	683	0	0	154	204	224	0	0	0	0	101	0	0	0
WILSON, G	86	681	206	0	278	0	197	0	0	0	0	0	0	0	0
AVERY, ROGER	87	677	0	0	0	314	0	0	0	179	0	184	0	0	0

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DIXON, NORM	88	676	0	0	319	357	0	0	0	0	0	0	0	0	0
HENRY, JAMES	89	676	0	0	193	294	0	0	0	0	0	189	0	0	0
PRACHYL, R	90	673	0	215	0	0	458	0	0	0	0	0	0	0	0
FORRESTER, B	91	666	0	0	0	373	100	0	193	0	0	0	0	0	0
MEREDITH, TOM	92	665	0	0	334	181	0	0	0	0	0	150	0	0	0
CALHOUN, B	93	659	182	0	225	0	252	0	0	0	0	0	0	0	0
JOHNSON, J	94	656	0	221	271	0	0	0	0	0	164	0	0	0	0
KUSE, LARRY	95	655	152	0	176	0	0	0	177	0	150	0	0	0	0
LEVY, HOWIE	96	646	198	0	241	0	0	0	0	0	0	0	57	0	150
MASKER, G	97	638	0	0	236	402	0	0	0	0	0	0	0	0	0
ATKINS, B	98	634	286	117	0	0	231	0	0	0	0	0	0	0	0
BLAZZARD, D	99	629	203	*	181	0	245	0	0	0	0	0	0	0	0
SPENCER, D	100	629	284	0	0	0	345	0	0	0	0	0	0	0	0
WILSON, F	101	626	177	140	0	0	309	0	0	0	0	0	0	0	0
PARKER, R	102	625	298	114	213	0	0	0	0	0	0	0	0	0	0
BUHRMAN, H	103	624	0	0	357	0	0	0	0	0	0	0	132	135	0
LECKEMBY, ROYE	104	624	0	0	263	200	0	0	0	0	0	0	161	0	0
RASSIER, D	105	623	0	0	151	133	0	0	0	0	0	0	0	178	161
HALL, ALAN	106	612	0	*	179	221	212	0	0	0	0	0	0	0	0
RHODES, C	107	612	0	115	0	122	135	0	0	0	0	0	96	144	0
JANSEN, D	108	608	87	*	282	0	115	0	0	0	0	0	124	0	0
MILLER, K. L.	109	601	0	0	289	312	0	0	0	0	0	0	0	0	0
MESSER, J	110	598	0	149	271	0	0	0	0	178	0	0	0	0	0
BLAZZARD, S	111	597	162	*	278	0	157	0	0	0	0	0	0	0	0
DALESSANDRO, C	112	595	233	0	309	53	0	0	0	0	0	0	0	0	0
HOTTENSTEIN, K	113	594	0	0	432	27	0	0	0	0	0	135	0	0	0
THORNBURY, D	114	576	162	0	0	0	414	0	0	0	0	0	0	0	0
SCHNEIDER, G	115	575	258	0	67	0	250	0	0	0	0	0	0	0	0
CHRISMAN, J. C	116	566	0	0	0	385	0	0	0	0	0	0	0	181	0
MASKER, S	117	562	0	0	351	211	0	0	0	0	0	0	0	0	0
HUDSON, G	118	557	243	0	0	0	314	0	0	0	0	0	0	0	0
RHYME, K	119	556	0	0	244	0	122	0	0	190	0	0	0	0	0
De PLESSIS, H	120	549	150	0	242	0	157	0	0	0	0	0	0	0	0
GEBHARDT, B	121	546	0	0	247	36	0	0	0	0	0	0	0	125	138
ESTEP, M	122	545	0	0	189	0	0	0	177	0	179	0	0	0	0
MASSEY, B	123	543	0	152	0	0	391	0	0	0	0	0	0	0	0
MARGELEWIZ, T	124	541	0	0	207	0	0	0	0	0	0	0	0	161	173
MELLOR, B	125	541	226	0	0	0	315	0	0	0	0	0	0	0	0
SUMMERS, JEFF	126	539	0	0	367	0	0	0	0	172	0	0	0	0	0
WESTOVER, B	127	539	285	0	0	0	254	0	0	0	0	0	0	0	0
DOWNEY, B	128	538	0	201	0	0	0	0	158	0	179	0	0	0	0
BOWERMAN, S	129	529	0	0	368	0	0	0	0	0	0	161	0	0	0
LIBBY, T	130	529	139	0	264	0	126	0	0	0	0	0	0	0	0
SALYARDS, S	131	527	0	0	210	164	0	0	0	0	0	0	153	0	0
HOFFER, H	132	525	0	0	0	204	0	0	0	0	0	0	141	0	180

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1991 INTERNATIONAL BENCHREST CHAMPIONSHIPS

by

Skip Gordon

The 1991 World Benchrest Championship will be held at Fregus, on the French Riviera, from October 2 thru October 6. October 1 is set aside for practice.

The course of fire will be 100 and 200 meters for Light Varmint; 100, 200 and 300 for Heavy Varmint. A warm-up and five record matches will be fired daily. Selection from shooters who competed in 1990 will be based strictly on the number of points earned; those who did not compete in 1990 will be selected, if appropriate, on a first come, first served basis.

The U.S. will field three 3-man teams, the maximum allowed. Awards will be given on the basis of both team and individual performance.

The tournament is sanctioned by Federation Francaise de Tir. U.S. participation is being administered by Skip Gordon, and all inquiries should be directed to him at P.O. Box 233; Budd Lake, NJ 07828 (FAX 201-691-5507).

Eligibility for inclusion on the U.S. team will be based *initially* on shooters' 2-gun - LV + HV - in the 1990 IBS and NBRSA National Championships, and the 1990 Super Shoot. One point was earned for every competitor beaten.

Following is a list of shooters with 250 or more points.

Larry Baggett	321
Richard L. Baker	311
Eunice Berger	281
Walt Berger	377
Faye Boyer	289
Tony Boyer	448 (3rd)
Bill Brawand	278
John Brown, Jr.	289
Raymond Brunet	254
Lester Bruno	278
Bob Bulloch	275
Timothy Cantwell	321
Gary Conaway	319
Barry Devliegher	330
Ronald Dill	253
Norm Dixon	305
Larry Engelbrecht	326
Allie Euber	350
Lee Euber	334
Lowell Frei	449 (2nd)
John Gammuto	275
Tom Gonzalez	294
Clarence Hammonds	417 (5th - T)
Glen Harrison	261
Fred Hasecuster	327
Smiley Hensley	334
Ron Hoehn	454 (1st)
Charles Huckeba	428 (4th)
Paul Johnson	263
Don Jones	279
George Kelbly	318
Seely Masker	257
Chuck Miller	311
Perry Morton	274
Lou Murdica	312
Glenn Newick	383
Skip Otto	255
Don Powell	323
Rex Reneau	339
Brad Rosenthal	317
Jack Sutton	292
Joe Valentine	366
Gary Vincent	261
Dennis Wagner	263
Ed Watson	417 (5th - T)
Bob White	256

Important

Shooters with *300* or more points must advise Gordon, by February 1, if they wish to take part, and must forward a fee of $50.00 *per person,* made payable to QUALITY TRAVEL. This fee will NOT be refunded except in the case where the individual's point count is too low for qualification. The fee *will* be applied to the shooter's airfare.

It's possible, of course, there may not be 12 shooters with 300 or more points interested in making the trip. Therefore, shooters with 299 or less points—or shooters who did not compete in 1990—should advise Gordon if they are interested in joining the Team. No deposit is required. Selection from these shooters, if appropriate, will be based strictly on a first come, first served basis.

It is too early to provide any C*O*S*T* information. However anyone budgeting for a vacation should plan on perhaps $2500.00 for the ten days, plus additional airfare from one's home town to New York and back. Information regarding air fares, ground costs, side trips, etc., should be available in the spring.

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1990 BENCHREST SHOOTER OF THE YEAR
TONY BOYER

Tony Boyer went to the NBRSA Nationals in a bit less than great positioning for a serious run at the 1990 Benchrest Shooter of the Year title. The Siege Gun had failed to fire at the IBS Nationals, and it seemed as if the lad was completely out of the running. So much for theory. At Phoenix, Tony Boyer carried off every trophy that wasn't nailed down, and ran up 108 points for the match, which was a pretty dazzling display of pyrotechnics. When the smoke had cleared, Tony had won top honors for the year by a wide margin. Firmly in second place was Lowell Frei, a position that, we seem to recall, Lowell has occupied previously. One has to have the feeling that Lowell is going to take that first place crown one of these trys, and in third place was Lee Euber who had put on quite a display at the IBS Nationals himself. We note that both Tony Boyer and Lee Euber picked up 108 points at the respective nationals that they dominated. If you plan on dominating a 1991 Nationals, better plan on needing 108 points!

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1990
BENCHREST SHOOTER OF THE YEAR

PREPARED BY WALT BALCH

Name	Place	Total Points	Cactus Classic	Crawfish Invit.	Super Shoot	IBS 200/300	IBS NATIONALS	NBRSA NATIONALS
Tony Boyer	1	151	0	0	22	21	0	108
Lowell Frei	2	118	1	15	12	0	6	84
Lee Euber	3	108	0	0	0	0	108	0
Lester Bruno	4	60	24	0	0	0	6	30
Brian Hollister	5	58	0	0	0	0	58	0
Gary Conaway	6	54	0	0	0	0	54	0
Gary O`Cock	7	50	36	0	0	14	0	0
C. Hammonds	8	36	0	0	0	0	16	20
Don Gentner	9	35	0	0	0	1	22	12
Raymond Brunet	10	35	0	1	0	0	8	26
Alan Euber	11	30	0	0	30	0	0	0
Norm Dixon	12	30	0	0	30	0	0	0
Paul Mitchell	13	30	0	0	30	0	0	0
Ed Watson	14	30	0	0	0	0	30	0
Gil Hudson	15	30	0	0	0	0	0	30
Perry Morton	16	27	0	0	6	21	0	0
Ron Hoehn	17	24	0	0	8	0	0	16
Bill Forrester	18	22	0	0	0	0	2	20
Bob Bulloch	19	20	0	20	0	0	0	0
Barry Sullenberger	20	20	0	0	0	20	0	0
Charles Gough	21	20	0	0	0	0	20	0
Glenn Newick	22	18	0	18	0	0	0	0
Duncan Daughtery	23	18	0	0	0	0	18	0
Don Nielson	24	18	0	0	0	0	10	8
John Chrisman	25	17	0	0	0	5	12	0
Skip Otto	26	12	0	0	0	0	12	0
Robert Fritz	27	12	0	0	0	0	0	12
Jeff Summers	28	10	0	0	10	0	0	0
Tony Peria	29	10	0	0	10	0	0	0
Howard Scott	30	10	0	0	0	0	0	10
Jack Sutton	31	9	0	0	6	3	0	0
Faye Boyer	32	8	0	0	0	8	0	0
Butch Wahl	33	8	0	0	0	8	0	0
Dan Lilja	34	8	0	8	0	0	0	0
Don Spencer	35	8	0	0	0	0	0	8
Lee Andrews	36	7	7	0	0	0	0	0
Larry Baggett	37	7	5	0	2	0	0	0
Tim Cantwell	38	7	0	1	0	0	6	0
Chuck Miller	39	6	0	0	6	0	0	0
Charles Huckeba	40	6	0	0	0	0	6	0
Don Powell	41	6	0	0	6	0	0	0

PREPARED BY WALT BALCH

G. C. Schaefer	42	6	0	0	6	0	0	0
Jerry Johnson	43	6	0	6	0	0	0	0
Larry Englebrecht	44	6	0	0	6	0	0	0
Red Cornelison	45	6	6	0	0	0	0	0
John Brown Jr.	46	6	0	0	0	0	6	0
Carlos Pacheco	47	6	0	0	0	0	0	6
Bill Brawand	48	5	0	0	0	5	0	0
E. Findley Jr.	49	5	5	0	0	0	0	0
G. Forys	50	5	0	5	0	0	0	0
J. Hostetler	51	5	0	5	0	0	0	0
A. Tsuchiya	52	3	3	0	0	0	0	0
D. Mitchell	53	3	0	0	0	3	0	0
Harold Morgan	54	3	0	3	0	0	0	0
Jim Oliver	55	3	0	0	0	3	0	0
Joe Valentine	56	3	0	3	0	0	0	0
L. Scharnhorst	57	3	0	3	0	0	0	0
R. Parker	58	3	3	0	0	0	0	0
T. Margelewicz	59	3	0	0	0	3	0	0
Woody Ellison	60	2	0	0	0	0	2	0
Bill Summers	61	2	0	0	0	0	0	2
Bruce Atkins	62	2	0	0	0	0	0	2
Rex Reneau	63	2	0	0	0	0	0	2
B. Delighter	64	1	0	0	0	1	0	0
Don Geraci	65	1	0	1	0	0	0	0
M Lenard	66	1	0	1	0	0	0	0

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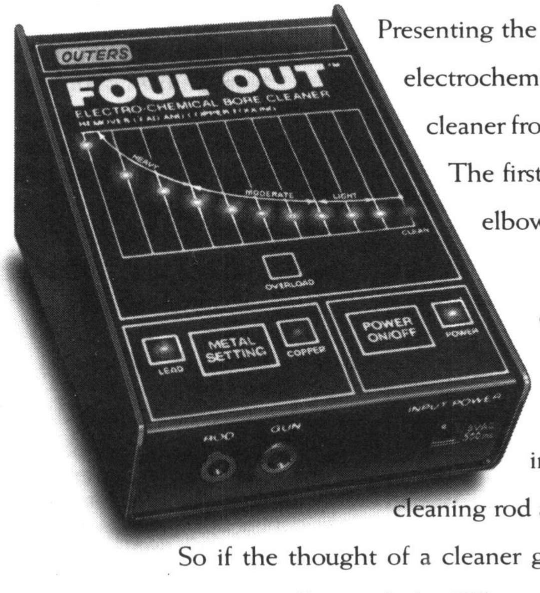

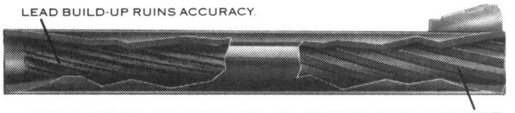
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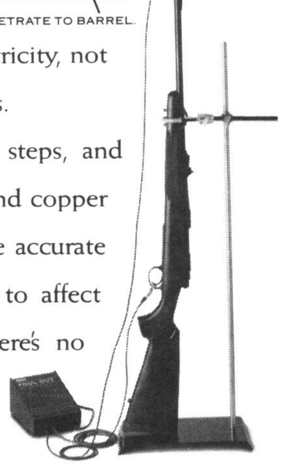
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HUNTER CLASS
A REAL EYE OPENER

by

Roger Amos

In the spring of this year, while going through the latest issue of Precision Shooting, my attention was rather forcibly drawn to the challenge to hunter class shooters (page 3, June issue). Hmm . . . interesting, indeed. This demented publication, if I read their childish scrawlings aright, proposes to give away . . . like, free for nothing, the princely sum of five hundred bucks, for what seems like a modest accomplishment indeed. (Editor: well, we *thought* it was a modest accomplishment, when we first offered the five hundred dollar prize, back in 1989, and then again in 1990. If we had a dollar for every hunter class shooter who, over the years, has solemnly told us that his hunter rifle shot quarter minute of angle as a routine matter . . . we most assuredly would be a millionaire many times over by now.) All I had to do was shoot a .249 or lower aggregate with a hunter rifle . . . and I had the benefit of being able to use a 36 power scope if I chose. The more I thought about the challenge, the more I thought I could carry it off. My big concern was that someone would beat me to it.

Fortunately, from the viewpoint of costs, there was nothing that I had to go out and buy . . . I had a rifle that I *knew* was capable of carrying out this little task. My rifle is based on a Remington 700 Action, with an M70 safety (which allows me to enter either NBRSA or IBS hunter class matches). It has a Hart 2 ounce trigger, McMillan graphite desert cameo stock, Leopold-Premier 6x compact scope with a $^{1}/_{10}$ M.O.A. crosshair, and a Hart hunter class contour barrel in .30 caliber, 1 in 15 twist, and 22 inches long.

The rifle was gunsmithed by Audy Adams, of Tyler, Texas; it was set up in 30 x 44 chambering, with a .330 neck.

Prior to the construction of this gun I consulted with several of the gurus of gunsmithing, and many successful hunter class shooters, including Speedy Gonzalez . . . a name that needs no introduction in the hunter class world. After many lengthy and much appreciated conversations with Speedy, and Audy Adams, I could see the handwriting on the wall . . . at least as far as caliber/twist/bullet weight were concerned. Once this was clear I ordered a 1 in 15 inch twist 30 caliber barrel from P.J. Hart, a hunter class stock from McMillan, and dove in to the murky waters head-first. (Editor: we urge our readers not to go diving into unknown waters without checking for the presence of piranha first. We suggest sending a trap or skeet shooter into the water first, and them observe carefully what happens to him.)

I have bedded many benchrest rifles in the past twenty years, but this hunter class rifle was a first for me. It was like bedding a deer rifle that one wanted to shoot like a benchrest gun! There are those . . . fortunately, a minority . . . benchrest shooters who tend to look down their noses at hunter class, feeling it to be a pointless, overly easy form of competition. Boy, are they every wrong!

I have never shot a more challenging, or educational rifle in my life. This "little" gun has taught me more about the proper setting up of front and rear rifle rests (including how full or hard they should be), where they should be (in relation to the front or rear of the stock) to prevent stock deformation during recoil, and how to lube the stock and rests for free, smooth, straight-back recoil. I personally feel that if a shooter can master the not to be taken lightly task of shooting a hunter gun well, he will have much less problem with conventional varmint class benchrest rifles and calibers. This gun has pounded home to me the absolute importance of "gun control"; my setting up straight and upright behind the rifle has now become both automatic and instinctive. The sporter class rifle has earlier made me a better shooter; the lightweight (10$^{1}/_{2}$ pound) rifle, and a 6 PPC producing a reasonable amount of recoil in this light rig (nowhere near as noticeable with, for instance, a .222 light varmint class gun) making me much more conscious of the need for skilled gun control. Well, the hunter class gun was even more of a challenge (to shoot it

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well), and conversely I benefitted even more from my work with the new arrival in my battery of benchrest guns.

This type of score shooting will teach you an awful lot about the wind, and the absolute necessity of paying full attention to it if you are going to have your shots ending up where you want them (the exact center of the target) . . . where they belong. Additionally, because each target sheet has six different aiming points involved, you automatically learn how to re-set the gun in various different spots, both horizontally and vertically, and to do it quickly. The horizontal placement practice has helped me greatly, when I am using the small auxiliary bulls on the benchrest sighter target, because you must learn never to leave the gun with any strain to the sides, especially as gun recoil increases. Even with the considerably heavier heavy varmint class guns (13½ pounds), the more that you know about smooth, straight, unvarying gun movement, the tighter your group will be. Further, as your confidence in your equipment grows, as well as your confidence in your own shooting skills . . . the payoff, in results, is tremendous.

Another eye opener was the simple fact that there has not been all that much published about loads for many of the hunter class calibers, such as the 30 x44 that I finally settled on. This is in sharp contrast to the benchrest shooter's cases, such as the .222 Remington, or the 6 PPC, where everyone in the world knows that standard accuracy loads. Thanks to Speedy and Audy Adams I got off on the right foot. I subsequently did a lot of testing and load development work on my own, and feel that I have benefitted greatly, as a shooter and competitor, from the work I was forced to put in here, at the practice bench.

I have tried Speedy's 110 grain and 125 grain bullets, and have found very little difference between them, but I did prefer the lighter recoil of the 110 grain version. Unfortunately there are no jackets available today for Mrs. Speedy to make anything lighter than 125 grain bullets.

I have tried 748, H 335, 4895, H 322, GI 322, and most recently, Australian H 322 . . . and this latter powder appears to work best of all in my rifle. The new "Aussie" 322 is much denser than the other 322 blends, and has turned out to be perfect for the 125 SG bullet in a 30 x 44 chamber with a 22 inch barrel. Previously I could only get 38.5 grains of Scottish H 322 in my eases. Now the new Aussie H 322 allows me to get 40 grains behind the bullet, and this has brought my muzzle velocity up another 100 feel per second. This is a dramatic increase, and proves helpful on the windy sort of days that (it seems) benchrest matches are held on.

I also did a lot of experimenting with cartridge cases. Speedy advised using .300 Savage cases, but I just had to try both the .308 Federal Match case and the B.R. basic case. Both of these cases, with .308 basic head size (about .001 larger) fit snugly in my rifle chamber, as well as my Wilson seater die. They did function well, but "as warned" . . . the small primer used in the B.R. basic case, which seems to work quite well with a revision into 6 BR or 22 BR configurations, gives quite erratic ignition, and resultant vertical stringing of shots in the 30 x 44, with its much larger powder charges.

Well, let's get back to this little matter of the *PS* Challenge. One beautiful June day . . . what is so rare as a day in June? . . . I loaded up my equipment, and motored down the road to the Fairchance Gun Club, where they were holding the Eastern Regionals. As I saw things, if the weather conditions were anywhere near reasonable, they could kiss their five hundred bucks goodbye. I mean, I knew this gun, and knew it well. At home, with a 6X scope on top, it would group in the twos and threes. When I put a 36X on top, with good conditions the gun moved into the low twos or high ones! I fired some 150 rounds in getting ready for this go-at-it, and the confounded gun turned in nothing worse than a low four. Yes, the gun was ready, all right.

At Fairchance I proceeded to start off (in the warmup, fortunately), with a mid-seven group. It was easy to find something to blame it on, however. I'd had to get up at 3:00 a.m. to get to the regionals. Obviously I was just half awake. Then, in match #1 and #2 I shot mid fours. I saw that I was so far behind that I couldn't possibly break that .250 figure, so I put the 30 x 44 away, and got out my Strange Duck .22 BR, and shot consistent twos in the heavy varmint class, and consistent threes in the unlimited class in the afternoon. I shot a ten shot .135 group in the unlimited class, with my heavy varmint gun; this helped a bit with my wounded pride. To make this all make sense . . . when I got home, and tested the hunter gun's 36x scope on other guns . . . it became quite obvious . . . scope troubles!!!

This was my best season ever, from the viewpoints of learning more about what makes benchrest rifles tick, and learning some of the fine points of accuracy shooting. And a lot of what I learned, in both areas, can be traced back to my work with the hunter class gun. It may have been a bit harder to master, but I learned a lot while struggling with it.

Comes spring of 1991, if those characters at *PS* are crazy enough to repeat that *PS* Challenge (Editor: it wouldn't surprise me if we did), I'm gonna go after it again, albeit with a different scope this time. I will try to learn something every time that I pull the trigger, and I will try to remember to keep shooting for *fun.* Jesse Corder once told me that "every time that you pull the trigger some one smiles. Sometimes it's the other guy; sometimes it's you." Those of you that know me know that I will be pulling the trigger and smiling . . . and enjoying the greatest game and the greatest people in the world.

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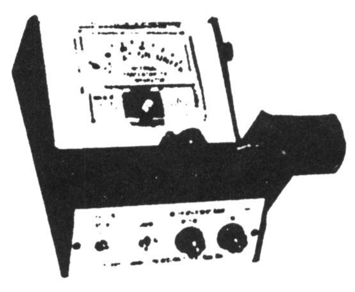

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BUILDING A 1000 YARD PRONE RIFLE

by

Tom Guerio

Building a rifle for long-range competition can be either a lot of fun or a frustrating and costly experience. A few years ago, I became interested in shooting 1000 yard matches and decided to build a rifle specifically for that purpose. I had a benchrest rifle and was very interested in the precision gunsmithing and accuracy loading techniques used by the benchrest shooters. The idea of shooting at 1000 yards fascinated me, so I decided to have a long-range prone rifle built. My gunsmith and friends were able to give me some advice on what I needed, but through the course of the first match season I did run into some unexpected problems with my equipment. This was entirely due to my inexperience and the lack of information written about 1000 yard shooting. Any shooter interested in long-range prone shooting may find some of this information helpful.

To understand the requirements of a long-range rifle, we need to know something about the matches they will be fired in. There are three different NRA long-range matches: matches fired from 600 yards individually or as part of the National Match Course; the Palma Cup, fired from 800, 900, and 1000 yards; the Leech and Wimbledon Cup matches, fired from 1000 yards. All of these matches are fired with metallic sights except for the Wimbledon Cup, in which a telescopic sight may be used. Rifles used in 600 yard matches must meet NRA match rifle specifications, which require a magazine capable of holding 5 rounds. Rifles used in the Palma match can now be either repeater or single shot, but must be 308 or 30-06 caliber. The Leech and Wimbledon Cup matches allow the use of a single shot action in any caliber. While many shooters will use the same NRA match rifle in all these competitions, such a rifle will be a compromise in some respects. Some of the information in this article will be applicable to rifles for all the long-range matches; however, the focus will be on building a rifle especially for the Leech and Wimbledon Cups.

The Leech and Wimbledon Cup matches are fired at 1000 yards from the prone position. The only artificial support comes from the sling, shooting jacket, and shooting glove. Twenty record shots with unlimited sighters (fired first) are fired in a time limit of 30 minutes. The official NRA 1000 yard target has a 20 inch 10-ring and a 10 inch x-ring. Theoretically then, the long-range rifle must be capable of shooting 1 MOA for a perfect score of 200-20x. While this level of accuracy is fairly easy to achieve, 1000 yard shooting involves a lot of uncontrollable variables, such as wind, light and mirage. It is therefore desirable to build as accurate a rifle as possible—it may not be a necessity, but it sure won't hurt your score. All of my long-range rifles are capable of shooting 1/2 MOA or better. It must be remembered however, that accuracy is only one of the requirements of a long-range rifle. It also must be able to shoot a relatively heavy bullet with a high ballistic coefficient at high velocities and the stock design must be comfortable enough to allow the shooter to remain in the prone position for a long time.

Stocks

There are many stock styles that can be used on a long-range rifle; however there are only a few designed especially for that purpose. Because long-range matches can be fired with both metallic and telescopic sights, the stock should have an adjustable cheekpiece. Also desirable is a butt plate that can be vertically adjusted. My first long-range rifle had a McMillan prone stock—patterned after the Anschutz 1411 prone stock—and is the most comfortable stock I have used for long-range shooting. This stock can be ordered from McMillan with an adjustable cheekpiece and a 3-way adjustable butt assembly.

An adjustable cheekpiece allows the shooter to maintain solid face contact with the stock regardless of the height of the sights. This feature is particularly important when using a scope. Because the shooter can keep his face in firm contact with the cheekpiece there is no strain on the neck muscles and the shooter can stay in position comfortably for the length of the match. The cheekpiece on the McMillan stock is adjustable both vertically and laterally, allowing a very precise fit.

The butt assembly can be adjusted for length of pull (usually 12 1/2-14 inches), cant, and elevation. The elevation feature allows the shooter to keep the butt in the same place in the shoulder, but at the same time be able to raise or lower the rear of the rifle, and therefore the point of aim.

Another feature of prone stocks is a relatively vertical pistol grip. This allows the shooter's forearm, wrist, and trigger finger to remain in a straight, natural line with the trigger.

Choice of stock material is something else to consider. While fiberglass stocks do not totally dominate long-range rifles, as they do in benchrest, they are getting more popular. Few will disagree that the fiberglass stock is stronger and more stable, but whether it will make the rifle more accurate is another matter all together. One consideration that is important however, is that a fiberglass stock with all of the adjustable features can cost several hundred dollars less than the equivalent in a wood stock simply because the wood stock will likely have to be a completely custom job. Whichever material is chosen, be sure to epoxy the forend rail in its channel to prevent it from being pulled out by sling tension.

Actions

The shooter building a long-range rifle has several choices in suitable actions. Because all NRA long-range matches are slow-fire, a magazine is not necessary. Many shooters prefer a solid-bottomed action for its rigidity and increased bedding surface. The least expensive approach to the solid-bottomed action is a Remington 40-x, if you can purchase just the action or barreled action. The other alternative is a custom action. Allen Hall's express action and MCS's SLV magnum are made with 1000 yard shooting in mind. The custom actions have the advantage of being true magnum length actions, whereas the Remington 40-x is a short action. This allows the shooter to remove a loaded round from the rifle through the port, unlike the 40-x in which the round must be removed through the rear with the bolt. This may not sound like a big deal, but if a cease fire is called while you have a loaded round in the chamber, you will have to lower your cheekpiece to remove the bolt and the round. When ready to resume fire again, it will be necessary to re-adjust your cheekpiece.

The next alternative is to use a repeater action like a Remington 700 or Winchester 70, which are the most popular. Even though they are less rigid and have less bedding surface than the solid-bottomed actions, the difference in the accuracy potential of the rifle will probably not be a factor when compared to the human error in holding and aiming at 1000 yards. If you choose to use one of these actions or the 40-x, it will need some work. The bolt face, action face, and recoil lug should all be squared and the bolt lugs lapped for near 100% contact. Some shooters also prefer to use an oversized recoil lug and a heavier firing pin spring (usually about 28 lbs.). Of course, a good trigger is essential. The trigger must be free of creep and backlash and have a consistent let-off. Most of the custom actions are designed to be fit with Remington-type triggers.

One of the most critical factors for obtaining good accuracy is the bedding of the action. Pillar bedding with either epoxy or metal pillars is probably the best method, particularly with wood stocks. With the pillars running all the way through the stock, the action can be torqued in without compressing the stock. The amount of torque recommended varies from gunsmith to gunsmith, but something in the 40-60 inch-pound range should be about right. It is probably best to test the individual rifle to see where it shoots best anyway.

Barrels

Selecting a barrel is simple—get one from one of the top barrel makers and you cannot go wrong. When ordering your barrel, you need to specify the caliber, twist, length, and contour. 300 Winchester, 7mm Remington, and 30-338 are among the most popular calibers for long-range shooting and are capable of outstanding accuracy in a well-built rifle. These and similar cartridges can shoot heavy bullets at high velocities, minimizing the effects of wind at long-range.

Selection of twist should favor the faster rates. Unlike benchrest shooters, who seem to like their barrels with the slowest possible twist, a long-range shooter needs to insure that his bullets are well stabilized. The difference between a stable and marginally stable bullet can mean hitting the 1000 yard target or not. In order to determine the proper twist, you need to decide what the heaviest bullet you intend to shoot will be. In both 30 caliber and 7mm, a 9" twist will allow you to shoot the 220 and 168 grain bullets, respectively.

Barrel length and contour will in part determine the overall weight and balance of the rifle. Barrel length should be long to maximize muzzle velocity; 26"-28" is about standard. Barrel contour should be heavy. The larger diameter barrels will be stiffer and will dissipate heat more quickly. I have found that a barrel that is 1.200" at the breech, .900" at the muzzle, with 4" of cylinder makes a well balanced prone rifle that will weigh 13-15 pounds when completed.

Sights

Sights used in NRA long-range competition can be either metallic or telescopic, depending on the particular match. All sights must have accurate, repeatable adjustments with enough

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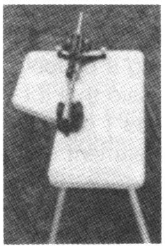

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range to zero at 1000 yards.

Metallic sights used for long-range shooting are the aperture type. The rear sight is mounted to the receiver and is usually fitted with an adjustable iris to accommodate varying light conditions. The front sight is a tube-like globe that accepts a variety of different inserts. The inserts can either be an aperture or a post. The aperture, however, allows for more precise aiming. All the metallic sights designed for hi-power rifle competition have an adequate range of elevation and windage adjustment for 1000 yard shooting.

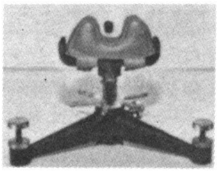
Telescopic sights used in long-range competition are either the receiver mounted type or the barrel mounted type such as the Unertl. Both types are fairly common and each has its advantages over the other. Some receiver mounted scopes may not have enough elevation adjustment to get a 1000 yard zero. I learned this lesson the hard way at my first match. A friend had told me to come to the match with a 100 yard zero and the velocity of my ammunition, for 1000 yards. I arrived at the match raring to go, and my friend told me to come up 27 minutes on my scope. When the adjustment knob stopped turning after only 20 minutes I suspected I may have a little problem zeroing. I ended up having to shoot that match aiming at the trees behind my target. After that, I spoke with Dick Thomas at Premier Reticles about solutions to this problem. I had been using a Leupold 6.5-20x at the time, and he said that if I gave the scope a forward slope I would increase the amount of adjustment that could be used for raising the point of impact. He said shimming the rear of the scope should take care of the problem. He also told me that on all of the Leupold vari-x III's the last full rotation of the elevation and windage knobs do not change the point of impact (not the case with the fixed target models), something I had not been aware of. If you do not like the idea of shimming, you can get a special base designed for 1000 yard shooting. These bases have a built-in forward slope and are made by MCS. If you use the Unertl-type scopes you should not have this problem, as their external adjustments have a greater range. One other alternative, but very expensive, is to use one of the Leupold MKIV military/law enforcement scopes. These scopes have nearly 3 times the elevation adjustment range of the standard target scopes. Whichever scope and mount system you decide to use, be sure and check it out by firing on paper at 100 yards, then raising it to the 1000 yard zero and see if the bullet strike has moved the required amount. Most of the magnums are going to need 25-30 minutes of elevation above the 100 yard zero.

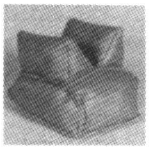
A second problem encountered in using a receiver mounted scope is not being able to get enough eye relief. When slung-in tight in the prone position, your face tends to be farther forward on the stock. If you use Leupold or Weaver style mounts it is possible you will not be able to get the particular scope you are using far enough forward. Using the special base mentioned above also takes care of this problem, as they are made extra long to allow the scope to be mounted much farther forward.

Scope magnification is something of personal preference, but those used for long-range shooting are usually between 12x and 24x. The lowered powered scopes present a steadier hold and do not show mirage too bad. The higher powered scopes magnify the movement of the rifle, particularly that caused by your pulse beat, which is distracting to some shooters. The higher powered scopes also show mirage more.

Other Equipment

If you are interested in this kind of shooting and are thinking about shooting in matches there are some other pieces of equipment that you should have. A good shooting jacket will give you some support and help dampen your pulse beat. A shooting mitt protects your hand from the pressure of the sling and provides some comfort. A mat offers some protection from the ground as well as providing a non-slip rubber surface for your elbows. The sling and forend stop provide the support that will hold most of the weight of the rifle. There are a variety of forend stops available so you may have to try a few to find the one you like best. Not all forend stops will fit all rails though. If you have a choice when building your rifle I would use an Anschutz rail, as almost every type of accessory is made to fit them. You will also need a spotting scope good enough to see the 6" spotters used to mark shots on the target. The spotting scope should be fitted on a stand specially designed for position shooting; the standard tripod-type stands just do not work well for this kind of shooting. It is also a good idea to have a few tools: allen wrenches, screwdrivers, etc., in case anything comes loose during the match. All of these things are not absolutely necessary, but they will help make shooting the match more comfortable and convenient, so that the shooter can concentrate more on the conditions and firing the shot.





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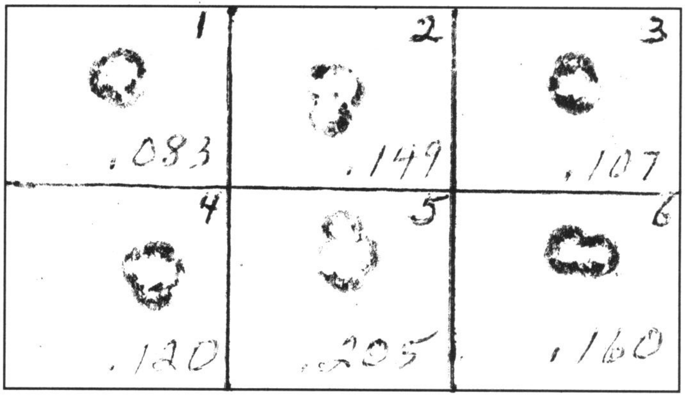
SHOOTING 6 GROUP AGGREGATE ON BACK OF BUSINESS CARDS AT 50 YARDS

by

Geza Nagy



**6 groups aggregate
50 yards—.1025
x 2—MOA—.2050
Back of 3" x 2" business card**

I went to the Central Jersey Club range to test some 64 grain flat based bullets made by Lester Bruno. It didn't take long to find out this was not the kind of day to test anything.

The original weather report predicted overcast skies with chance of showers, and winds 10 to 15 miles per hour. That would have been acceptable to me depending on the direction of the wind. However, the sun was out bright and shiney with only a few scattered clouds. Our range faces south and this is not the best of conditions when the sun is shining and wind blowing on this range.

Tropical storm "Hugo" was moving up the east coast. Little did I know that advance scouts from this storm were out looking for a good place to hit New Jersey. I had plenty of wind flags with me but the swirling winds out of the southeast had me baffled in the morning with 6 flags out.

Around noon time I decided to try something that I had wanted to do for a long time. I brought the target frame back to 50 yards and set up 4 wind flags between the target and me. I lined out six equal squares on the back of one of Mike Toth's business cards with the intention of shooting 6 groups on the back of that 2" x 3" business card.

This seemed like a fun thing to do considering the conditions for 100 yard shooting. I decided to try the rest of the Bruno bullets on a better day and instead would shoot 68 Euber bullets with known loads.

I took a break and ate my lunch and started the test about 12:30 to about 2:30 p.m. The temperature was in the 60's and very comfortable. I had to shoot slow to give the barrel a chance to cool. At mid day the sun shines on the barrel at this time of year on this range.

I used my light varmint gun with a Wiseman barrel chambered by Mike Toth. The scope was a Leupold 36X. The action was a CPS, glued into a McMillan fibre glass stock. The load was 27.6 grains of H322 lot 42588 (50.5 Culver) in FL resized 220 Russian cases with .008 neck thickness. I used Federal 205 M primers lot 33A 9571 and 68 Euber F.B. bullets seated to 2.190 O.A.L.

A separate row of cases for each of the first groups was used as they came off the neck turner (groups #1-2-3). I reloaded the same 3 rows of cases for groups #4-5-6 in the same sequence.

The 50 yard 6 group aggregate was .1372 The M.O.A. came to .2744. If I had been shooting through the 50 yard targets to 100 yards the aggregate at 100 yards would have been much higher than that in the prevailing conditions.

I had done this same test at 100 yards years ago—B.P.P.C. (before PPC's were invented) with 6x47 and .222 magnum calibers. It isn't easy keeping the groups at 100 yards in the center of each 1" square. If the first shot goes near a line it is hard to chase it and not go over the border lines. I intend to try this again at 100 yards on a decent shooting day.

Perhaps even try 6 groups on a postage stamp.

It would have been easier if I had an identical target set up for a sighter. All that I did was to shoot at benchrest targets to get my point of impact near to the intersection of the cross hairs. It takes concentration and confidence in your ability.

I don't consider this real good for 50 yard shooting but there was some conditions running that it would have been difficult to do at 100 yards on this day.

I would like to have some of you shooters out there try it and send me the targets and load information with equipment used. We could have 2 categories, 50 yards and 100 yards. Only specify distance that you shot at. With no moving backers the honor system would work for the required number of shots. (5 shots in each square)

If we get a good one we could send it to the Guiness Book of Records. Neither IBS nor NBRSA would recognize such a record of course. But I will!

(Editor: we wish to reassure our readers, at this point, that Mr. Nagy is not starting a third association. We think).

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.257 BANSHEE: BARREL BREAK-IN AND INITIAL VELOCITY TESTING

by

Richard W. Kayser

Eighteen months ago Boyd Mace disrupted my peaceful rockchuck pursuit with his article "The Zortman Prairie Dog Wars," and the massive 32 pound 6mm-.284 Wildcat he was hitting dogs with at 600+ yards. I had gotten to the point with my .257 Roberts that any chuck under 500 yards I put the Crosshairs on was in jeopardy. Then this 6mm VLD bullet with its .560+ BC and downrange superiority puts my Roberts at a 300 yard disadvantage. It became an intolerable situation, and one that cried out for a remedy.

Mac McCluskey helped me fire the opening response by providing me with a couple 88gr LoDrag bullets. Then the LoDrag Survey showed that *PS* readers would buy a 115gr .600 BC Super .25. We could have a quality bullet that would provide Rockchuck accuracy out to the 1000 yard mark . . . perhaps beyond. The standard Roberts is limited to about 3500fps with the 88gr bullet, and perhaps 3200 with the 115gr, so a bigger capacity case would be needed to exploit these new longrange missiles capabilities.

About that time, one of the Nampa policemen showed me his newest toy. It was a European model Weatherby Mk V chambered for the 6.5 x 68 RWS cartridge. Necked down to .257" and blown out it would provide a capacity around 90 grains. Enough to boost the now 86gr Mac Bullet over 4000 fps, and a VLD-type 115 gr over 3700 if a proper burning-rate powder could be located.

That last piece in the puzzle was located in Missouri. A company called RVO advertised three current US-surplus ball powders, suitable for large capacity magnum cases.

Keith Francis at JGS Tooling talked to me on the phone, and drew the reamer print up to my basic specs. It sports a 35 degree shoulder and a minimum taper body (.010") with a .300" neck length. The chamber neck is .283", allowing .002" clearance on a loaded round with necks turned to .012".

Steve Kostanich had put my hunter rifle together, and seemed the logical choice to assemble the new rifle. It is a 700 Remington action, trued up and placed in a Davidson 1.75" x 11.5" round sleeve. I got the HV stock from Manley Oakley, and Dan Lilja provided the 30" x 1.25" barrel with a 10" twist to stabilize both the 86 and 115gr LoDrag bullets, or anything in between.

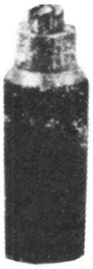
Steve called me in late October with the news that the rifle was done along with Wilson-style reloading and an FL sizer. My wife and I drove up to get the new baby on the 26th of that month, and this is the initial result of testing the 100 grain Nosler Ballistic Tip bullets. I chose the Nosler Balllistic Tips after talking with a couple of *PS* readers in Maryland. They have been getting excellent results with the 85 and 100gr bullets in a half-dozen tight-neck .25-284s' at high velocities.

I mentioned RVO powders as my first choice. One reason was the fact that it is ball powder. Ball powder is supposed to burn cooler, and anything I could do to lessen throat temperatures should help the barrels' accuracy life by reducing erosion. The proof of that pudding will have to wait about 2000 rounds or so.

The other reason to start with RVO was the cost; a 1 pound sample of the 3 powders could be had for $5 (each) postpaid. At $5 a pound, what could I lose? With a fireformed capacity of 91.5 gr of RVO-57 (versus 78.5 for the basic case) I was going to need a cheap source of powder. I wondered about measuring the case capacity in grains of water instead of powder, but gave it up. I have never been able to get a primer hot enough to ignite water. Besides, the equipment I'd need to test a steam-powered rifle is real pricey.

A limited amount of loading data is available for the three powders, but I was assured that I couldn't get into trouble by starting with 4831 data.

On to the testing. November is a cold month in Idaho, and the first day was a brisk 34 degrees at 10 a.m. A slight wind from 9 to 3 o'clock blew, and mirage was non-existent at the start. I had put 72 gr



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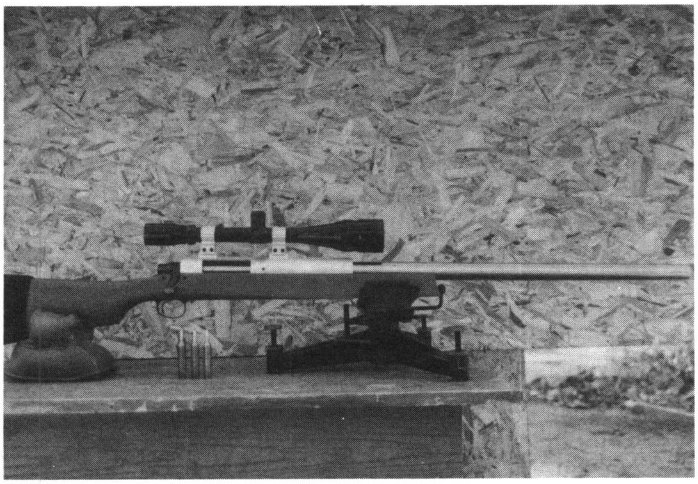
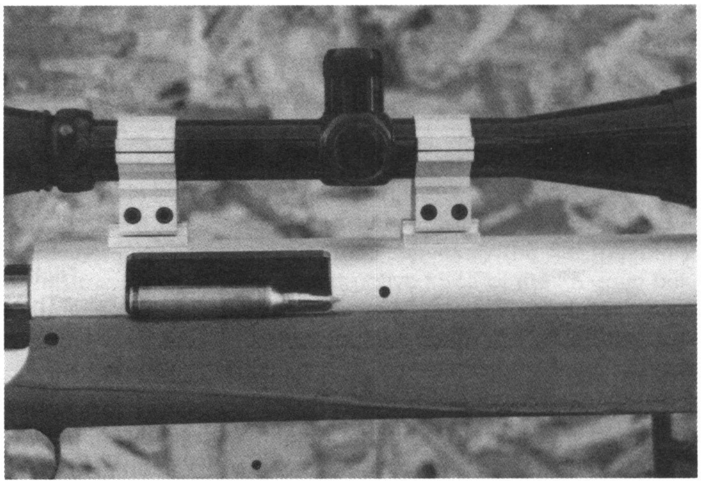

A first look at the 161b. 9oz. .257 Banshee built by Steve Kostanich


One of the 100gr Nosler Ballistic Tip loads that went 4000fps. Note the length of the cartridge compared to the 11.5" Davidson sleeve.

of RVO-57 in the first case, but it failed to blow the shoulder out sharp. It also gave me a pitiful 2775fps reading from the Oehler 35P printer. 76 grains did the shoulder nicely, and boosted the readout to 3290 fps average for the next 5 shots.

The entire afternoon was consumed with fireforming 30 cases and breaking in the barrel. The following weekend I got two sunny days with temperatures in the mid to high sixties.

I started out with 83 gr of the RVO-57. That gave me a reading of 3466fps and a three shot group that measured .648. I stepped up one grain at a time until 86.5gr gave me 3633fps, a five shot group that measured .926" and an extractor tattoo on the case head.

The next step was RVO's middle burning rate offering, #62. I was a bit disappointed with #57s' velocity/pressure curve, which bettered the new Nosler manual data for the .257 Wby. by only 75fps or so. I shouldn't have been concerned. RVO-62s' performance had me doublechecking the numbers on the chronograph. 86 grains of 62 pushed the Noslers over the screens at an average 3843fps, and the group measured .541". 87gr chronographed 3877, and 88gr broke the 3900fps barrier at 3907 fps. The groups measured .844" and 1.088".

Thirty-nine hundred feet per second with a 100 grain bullet! A year ago I would not have believed it possible. Accuracy was not good, but this testing was done to check velocity possibilities. I will have a couple months to work out a .25 moa or smaller load.

I uncorked the slowest member of RVO's lineup, RVO-65 and went to work. It is a bit bulkier than either 57 or 62. I can only get 88gr in a case without compressing it. That is a good place to stop, unless the rifle is throated for the 100gr Nosler. 88gr was good for 3928fps and a 1.25" group. I put three rounds together with 89gr just to try and wring a few more feet out of the 100gr bullets before heading to the 85gr Nosler and 86gr McCluskey bullets. I was not ready for the reading. 4000fps for the first shot!! The next two were 3998fps and 3989fps for a three shot average of 3998fps. That group measures a tidy .628".

That load is at a too-high level for safety, unless the barrel is rethroated for this particular bullet. The bullet protrudes into the case body almost ¼", taking up valuable powder space and raising pressures. With a properly throated barrel, it would have a usable topend velocity over 4000fps. Imagine a 100gr .393 BC .25 caliber bullet at 4000fps. Actually, it no longer requires imagination. All it takes now is a throating reamer.

Louis Carabillo started this with his letter about a 4000fps 80gr high BC load that would group about ⅓ moa. It's here, Louis. Zeroed at 500 yards the drop at 1000 is only 11.5 moa. From muzzle to the 500yd zero the bullet has a mid-range trajectory of 4.5 moa.

Next month I will have an in-depth report on Noslers' 85gr Ballistic Tips, McCluskeys' 86gr LoDrags, and results of fine tuning the 100gr loads. Stay tuned folks, the light bullets may hit 4200fps.

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"OF VARMINTS AND MEN"
or
MORE .17 CALIBER STUFF

by

Richard E. Cundiff
"The Desert Rat"

Now that another live varmint season is slowly winding down, most red blooded critter shooters are already looking forward to next year, and to what we can do to make it interesting and rewarding compared to this past season.

As most of you know by now, the prairie dogs caught hell again this year and were even given some national exposure through the news media from the state of Colorado. Can you believe, a prairie dog "super shoot"? . . . . . . WOW!

For several years now the land owners from Wyoming, Montana, and the Dakotas have been inviting shooters to come to these states to help them curtail the hordes of little critters that ravage and pillage their land. This is usually done through the use of ads in various periodicals.

Every few years some of the Nevada alfalfa ranchers has an unusually heavy infestation of the Richardson and Belding ground squirrels. 1990 was one of these years, and a call for help was sent out to come to Nevada and shoot the critters. The only stipulation was that the rancher in question asked the shooters to keep a simple tally on the number of fatal hits if possible. My imformant in the area told me the total at last count was 40,000 in 6 weeks. I do not know how many shooters, (somehow hunters just does not fit here), were involved in this melee, but I hope to have this information and the final score in the near future. Can you imagine the damage these critters can do to a crop that only has a profit margin of 30% at best? This particular ranch was only 500 acres or so and there are several dozen of these scattered over a 100 square mile area. I know another one of these fellows, a seed grower, who with his wife shot over 35,000 rounds of ammunition in a year just as a matter of survival, and this was 20 years ago. (Editor: Do we have any idea who or what they were shooting at?)

I have mentioned in another article that the Goverment "killers" were sent in to try and poison the squirrels during one severe infestation, but this was another "bureaucratic blunder" and it also killed every other living creature through the natural food chain, and the environmentalists came down on them with good reason. This situation has caused the alfalfa growers to look for help in other directions, namely the varmint shooters, to come and help control the yearly scourge of critters that invaded their land. Although the Richardson ground squirrel is an indigenous species to the area and were there long before man, being somewhat of a prolific mammal, they do not appear to have enough natural enemies to keep them in check.

For the last several years now I have been spouting off about the virtues of the .17 Javelina, and justifiably so. One of these reasons is that there is no need for a spotter for the long-range shots as you can usually see the bullet impact in your rifle scope because of the almost nonexistent recoil, and the ultra high velocity along with a very flat trajectory with the little 25 grain bullet. Even with the average weight .22 centerfire rifle and the 50-55 grain bullets you still are going to have some so-called "felt recoil," and can you imagine what the recoil is like with a high B.C. bullet in 6mm or .25 caliber, unless you use a 40 pound rifle, and this would seem somewhat ludicrous for a field varmint rifle. Of course the largest varmint we use the .17s for is the Black Tailed Jack Rabbit that can get up to around 8 pounds in weight.

I have had a great deal of interest in the .17 caliber for the last 30 years or so, in not only shooting, but also building, primarily the .17 Ackley Bee and the .17 Javelina. In the early 1970s I purchased one of the first Remington 700s in .17 Remington that became available in our area. In those days I was not as well informed of the fouling problems that were so prevalent in this caliber, or the proper method to remove said fouling, as I am today. Therefore, like so many other shooters of the era that were sold on the 4000+ f.p.s. marketing, but were not ready for a cleaning ritual every 15 or 20 rounds, I dumped this rifle on our local gun shop (from whence it came) for something that was a lot less finicky.

Although I have always had a place in my heart, (but not necessarily in my gun cabinet) for the .17 caliber, it was almost 15 years before I was to have another resurgence of interest in this "miniscule destructive device." This was 1983, with the acquisition of a W.W. Greener Martini cadet action, Douglas barrel, and a nice two piece stock blank in California English walnut. The chambering was the .17 Ackley Bee. This little rifle was pictured on the cover of *PS* a few months ago and was also mentioned in an article in 1985.

My next .17 caliber project was started in 1986 using the SAKO L-461 action as the basis. For this rifle I used a Douglas stainless match barrel that was made around 1978, and a Lee Six (Shilen pattern) varmint stock. This is the rifle that has been mentioned several times in *PS* magazine. The only thing that has been changed on this rifle has been the scope, a 6.5 x 20 Leupold. Everything else has remained the same for the last 4 years. I would hate to guess as to how many ground squirrels and jack rabbits have been victimized by this little rifle. By my expended bullet count I would estimate between 5000 and 6000 in 4 seasons of varmint shooting, and this with 95% of the original cases. Midway R-P bulk brass that were formed in a set of R.C.B.S. dies that were made in 1966. I know that there have been others that have discovered the wheel before me, but I still contend that the life of your brass is determined by a minimum chamber and a set of matching dies to minimize the excessive working of the case from expansion and contraction during the firing and subsequent reloading process. Of course if you are going to use seam busting loads that go beyond the elasticity of the brass, then you are going to have problems regardless of how well your chamber and dies are matched. This has been one of the faults of using an optimum case with hot loads, and trying to extract impossible velocities with a certain weight bullet. I am sure that, except for a few, the absence of .220 Russian cases has caused a lot of Benchrest shooters to adjust their powder measures on the down scale.

This past varmint season I was experimenting with a "new" .17 caliber case, the .17 Remington. It has been almost 20 years since my first experience with this cartridge, and in the meantime there have been numerous technical advances in the "small world" of the .17 caliber enthusiast. Walt Berger is making some superb bullets, Ed Shilen has some new tooling for his barrels, and today we have H-322 and Walt's T-32, along with several excellent cleaning products.

I had my friend Keith Francis at J.G.S. grind me a new reamer for the .17 Remington with a 1½ degree leade in the throat, and .0015 smaller at the .200 measurement from the bolt face. So far I have only used this reamer for a couple of my customers on the east coast. (Editor: Allow me to rephrase this . . . it was new, and I did not know how it was going to work out. So I used it for the rifles of a couple of Easterners. It works fine, apparently. Now I'll start using it for Westerner's orders). I haven't had a chance to make up the rifle that I had promised my wife as of yet, but maybe this winter I will be able to fulfill my obligation.

This year we had to resort to using a factory Remington 700 in .17 Remington. While always concerned about the "self destructing barrel syndrome," it still performed excellently. I made some shots that even Boyd Mace would have been proud of, even though to scale.

This rifle was set up for my wife Marge with only a trigger and bedding tune up. I mounted an old 2 x 7 Redfield on it in Leupold mounts, and the crosshair was so coarse, that it would subtend a ground squirrel at 200 yards. In spite of these handicaps we still managed to dispose of quite a few squirrels and jackrabbits at ranges of 100 to 400 yards. I made several lucky shots at 420 yards to the surprise of me and a couple of witnesses on hand. (Editor: They fainted dead away, to be exact).

As for the comment "to scale," I guess you could compare a 25 grain bullet hitting a target at 400 yards to a 80-100 grain bullet at 800 yards. Anyhow, I certainly was impressed with the performance of this "low buck" combination.

Before our sojourn to the land of the Richardson ground squirrel I had used two loads that seemed to show some promise, but I really did not have enough time to evaluate them to any degree. One of these loads was 21.5 grains of H-4895, which I had used in my first .17 Remington 20 years prior, and 20.5 grains of H-322. These loads both exibited good accuracy, but the 4895 load showed a little better pressure to velocity ratio. As most of you know, 4895 is a very "dirty" propellant, but is also very versatile in a number of different cases, maybe not the best choice for some, but a very useful powder just the same.

On our last trip, and on our last day of shooting, I was using some loads that we had made up the previous evening in camp. Most of our Jack rabbit shooting was done in the evening, with most of the shooting being done at twilight. Usually, from force of habit I will check a fired case every few shots or so just to make sure I didn't screw up somewhere in my reloading, especially if the muzzle blast has a discernible sound to it. But as it was we sure were knocking the hell out of the "Jacks" at the longer ranges, and some times during the heat of battle you just don't have time to "check things out."

I must have inadvertently upped my Culver measure one click (.3 of a grain), and did not discover this until we arrived home, and I noticed a few primers had leaked. This only goes to prove that when working with maximum loads in the .17 caliber, a lot can happen in a hurry with a few minor changes in components. I realize the fact that it can also occur in other calibers, but it seems to exaggerate in the .17 caliber.

I was very impressed with the .17 Remington, especially the flat trajectory and destructive force of the 25 grain bullet. It seems to be way out of proportion for the ballistic coefficient of this tiny bullet. According to some laws of physics and "theories" of external ballistics, this little projectile, with a B.C. of only .190 or so is not supposed to do some of the things that it does, but ask any shooter that uses a .17 and they will tell you that it works very well, thank you, and the wind be damned!

A few months ago while ordering some barrels from Ed Shilen, and not meaning to take up too much of his valuable time, I asked him if he had any experience with the .17 caliber as far as shooting one. He said no, for no particular reason, but that he has built several .17 caliber rifles for clients in Australia, and the comment a lot of them make is, "who was the 'mate' that started the erroneous statement that the .17 caliber 25 grain bullet is very sensitive in the wind?"

Evidently the Aussies have not experienced any unusual problems with wind drift to substantiate this statement that has been handed down by generations of so-called "experts" in the firearms field, and mostly without the proper research and development. What a certain projectile will do "on paper" or lately, on a computer readout, and what this same projectile will do under actual field conditions, becomes a very debatable subject indeed. While order does exist in the universe, it is not always that which we had in mind.

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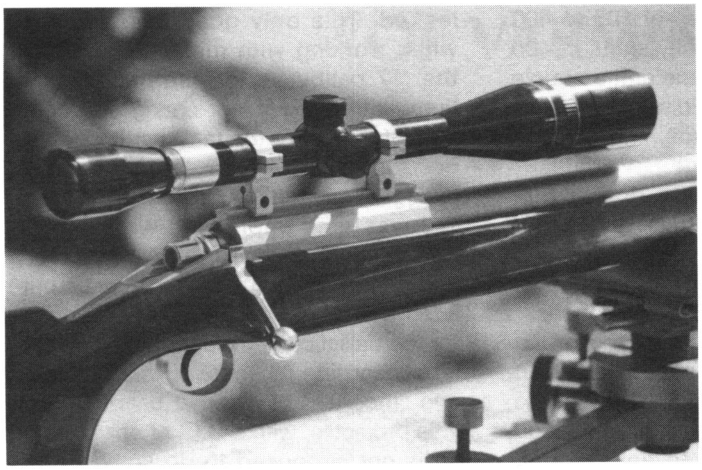
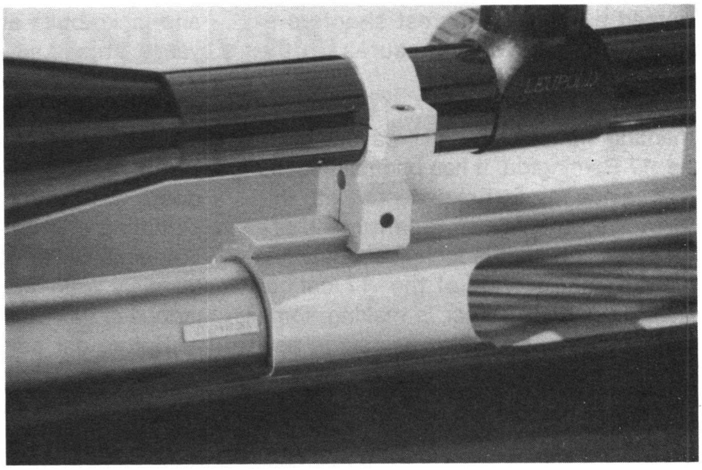
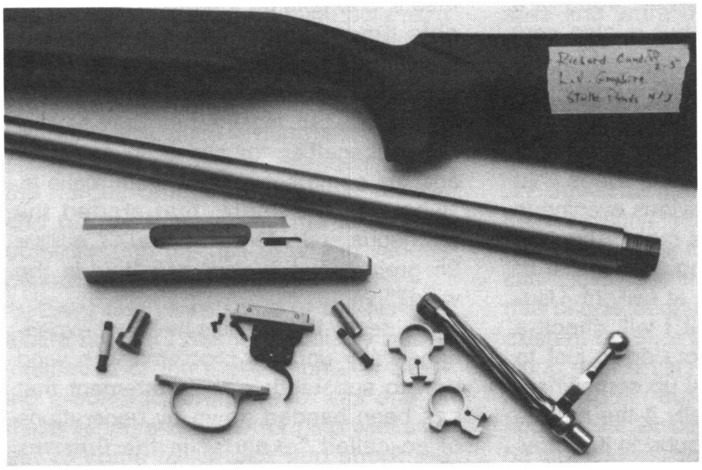


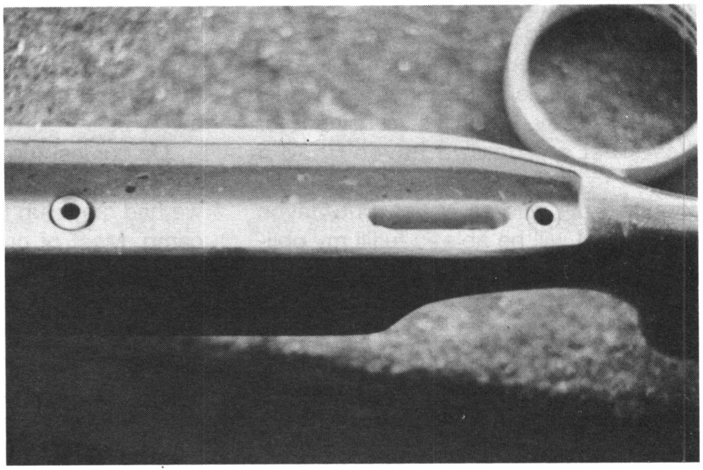
The Stolle .17 Javelina. The scope is a Leupold Seibert conversion of a 12 power to 30 power with $^{1}/_{16}$ Dot. The bright aluminum sleeve on the scope was a common sight in the 70's and early 80's and probably the best target scope I have ever used.



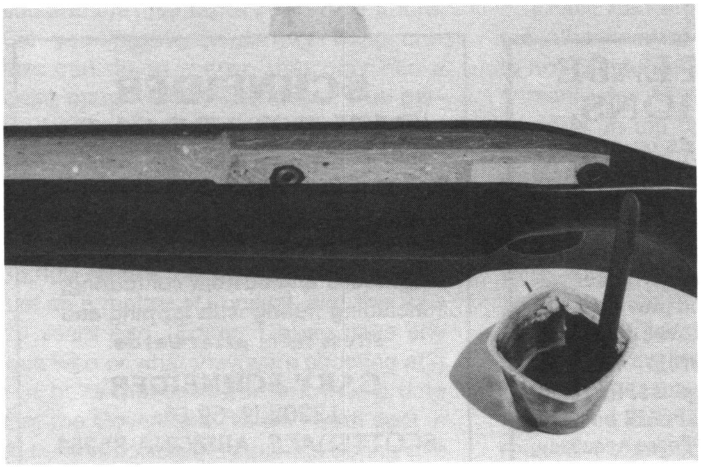
A dramatic closeup of the above. The little caliber designation is just a little custom touch that I sometimes add. It is epoxied on in case you were wondering how it was attached to the barrel.



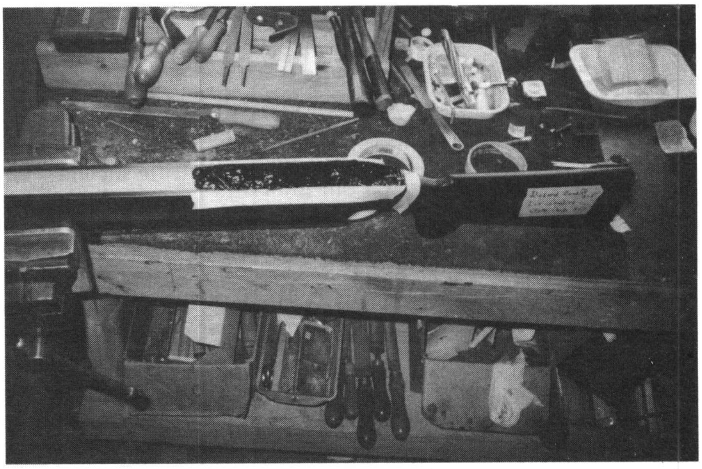
I will call this one the "makins." Stolle, McMillan, and Shilen. The front escutcheon and pillar were made from a piece of stainless barrel. The brass rear pillar was made from a piece of stainless barrel. The brass rear pillar was made from a valve guide out of a Volkswagen engine. The 2 action screws are wrapped with masking tape and coated with wax prior to bedding them in the stock. This is done to insure the screws are centered in the pillar.



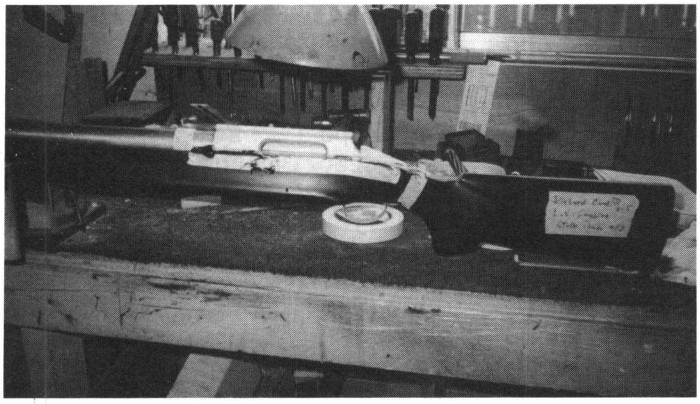
The stock "Hogged Out" prior to bedding the pillars.



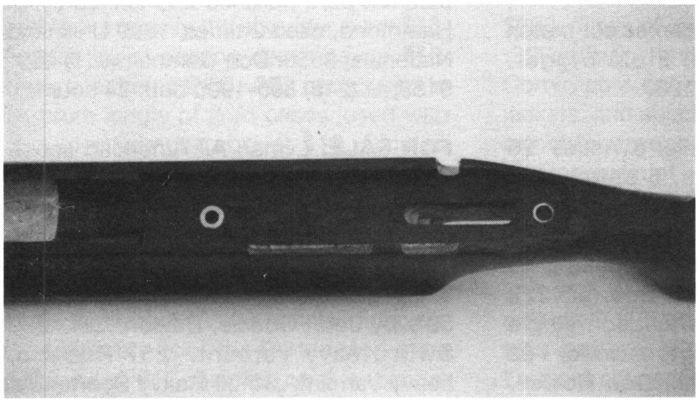
After the pillars have been glued in.



The stock ready for action. I tape as much as is necessary to keep the excess epoxy from getting all over the outside of the stock.



"Cookin'" I usually bed the action with the barrel screwed in as this insures that everything is in proper alignment. The barrel channel is left on the "gappy" side to facilitate in cooling of the barrel after firing a string.



The finished "bed." All of the gray areas are painted black.

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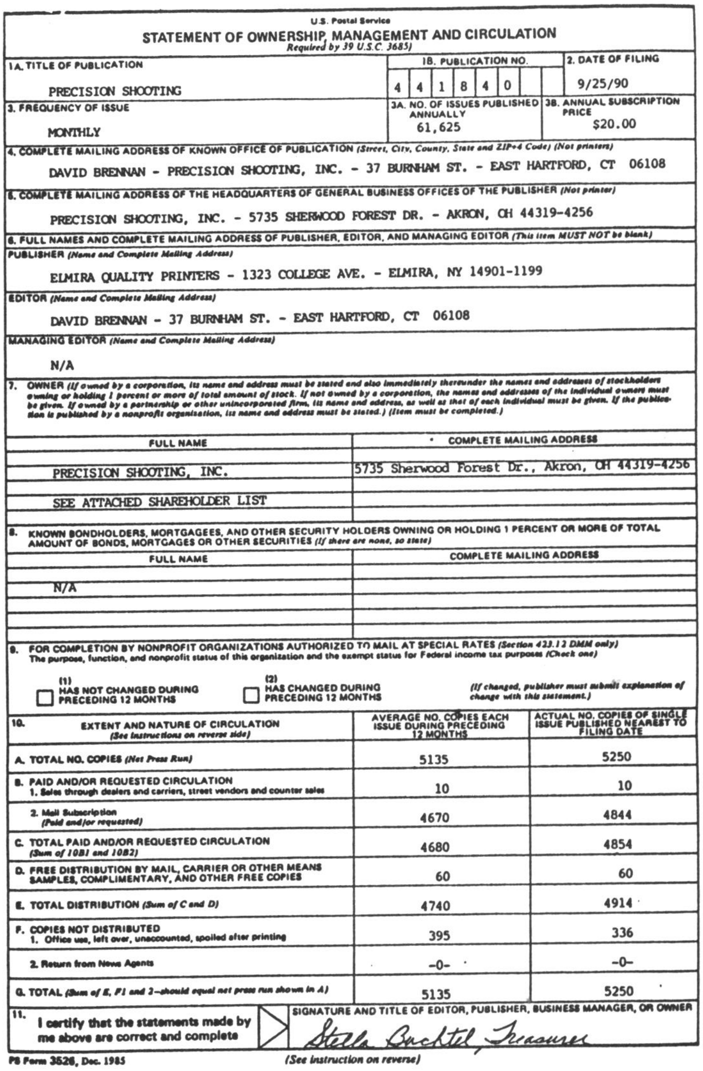

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GARAGE SALE: Sako .222 Remington brass (unfired), $40/100. Sinclair firing pin disassembly tool for Remington type bolts, new, $12. Sinclair neck expander w/dual caliber mandrel, $15. A small drawer full of misc. Unertl & redfield bases, long, short, flat & radius bottomed, screws included, will not hunt & peck for you, $50 for the lot. Lyman/Siebert 25 LWBR scope, boosted to 30X, w/double lock rings installed, excellent shape, $200. Wilson case trimmer, new, $15. Wilson case gauges, new, in 7BR, .222, and 6X47, $4.50 ea. Hart action cleaning tool w/dental rolls, new, $12. Sinclair action cleaning tool, new, $4.00. Mitutoyo Ball Micrometer .0001", excellent condition, $45. Laptop computer, 100% IBM compatible, 2-3.5 drives, 8088, excellent for range or home applications, $750. Enfield hunting rifle, 6mm EPPS, hand made stock, recoil pad, two boxes of fired brass & dies, and case $300. 1 set of pindell bulletmaking dies, .22 caliber, new rock chucker press, Corbin core cutter, 2000 excellent Sierra jackets, and spool of core lead, $750. Will consider trades on used bench guns and/or varmint rifles. John (312) 269-8701 days, (708) 323-9029 eves.

25 new .220 Russian cases, 36 formed and shot Waldog cases, Wilson .22 Waldog dies, 225 52 grain .22 Watson custom bullets, $250 or trade for 6X20 Leupold scope. Gary (303) 243-3106.

American Single Shot Rifle Association

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TCL
Ameri-Con-News

American Conference, Transcontinental Hunter Rifle League

Mainville - 1990 Ameri-Con Champs!

Mainville	
Gary Long	250-13X
Randy Fritz	250-11X
Vince Pastorella	249-13X
Todd Fritz	248-7X
Mark Johnston	248-5X
	1245-49X

LaGrande, OR	
Larry Bryan	250-17X
Randy Boers	250-11X
Larry Cribbs	249-10X
Matt Kalbarczyk	249-10X
Dale Frizzell	247-9X
	1244-50X

Tri-County	
Stan Johnston	248-10X
Gene Harless	247-12X
Verne Johnston	247-10X
Rocky Baptiste	246-4X
Larry Schwantes	245-6X
	1233-44X

Van Dyne	
Jim Angle	248-7X
Gary Gilbertson	247-7X
Dick Baier	243-7X
Jim Kuehn	243-6X
John Puhl	243-9X
	1224-31X

Golden	
Harold Flenthrope	249-7X
Butch Mattox	246-8X
Glen Flenthrope	241-5X
George Lange	240-8X
Burt Payne	236-5X
	1212-33X

Harold Flenthrope and the Posse, from Golden, CO., shot Silver Bullets throughout the 1990 regular season. In their quest for the Black Stump, the good guys slew desperado and Bushwacker alike– with calm command and well aimed shots – the posse overcame long odds. Harold had, in a letter dated July 30, 1990, boasted, "One of these days we're going to put it together and be amongst the top 10. We're pushing it alot, in our club and and averaging twice the shooters we had a year ago." OK . . . check the stats! The posse added 50 points to their 1989 season total and rocketed from 13th to 8th place in total points! When you can boast and back it up – well, Harold, just keep it to yourself next year, OK? You don't want a visit from me and Terry in one of our moods! Golden 5th place at 1212-33X.

Van Dyne, WI underdog champions of the Bush Mob: 3 wins, 1 loss, 4,876-135X regular season points (up 107 from 1989), 9th place in regular season total points, 4th place in the 1990 shoot off: 1224-31X. Shooting their R. W. Hart smithed 308's and 7/08's, Van Dyne earned and learned their way into the shoot off – in three years Dick Baiers' group, commited to continuing improvement, has been on the march. Jim Angle, top gun for Van Dyne, occupies a right respectable slot in the Ameri-Con Top 10. My sentimental favorite in the year's shoot-off – where the hell is Wisconsin anyway?

Judi's boys, Tri-Co., Oregon, claimed the Wild Card berth via a season total of 4941-185X - 3rd highest total in the league. Tri-Co. shoot of score, fired in adverse conditions, was only two points below their season average, but far behind the "other Oregonians" – a 1233-44X, nets Tri-County a solid 3rd place for 1990. Tony Seneca once again made the Ameri-Con Top 10.

Ward (A fitting name) Whitmore may be the most unhappy man in Sherwood, Oregon. Ward, it seems, showed up at the Beavers LaGrande, OR, shoot off match, wielding a new hunter rifle with a freshly knawed stock. Mr. Whitmore proceeded to shoot a nifty 249-8X, which the Beavers promptly chose not to use – Ward was not yet "one of the guys" – well, I bet next year Ward will post a few choice scores for the Beavers . . . Ward – he'll be a natural!

To compound the problems of LaGrande, their proud ("We'll shoot good next year") leader, Larry Cribbs, squandered all but 6 (six) of his precious GTB 135 gr. B. T. bullets. This was accomplished while compeling a league leading 249.5-12.5X average. The soft hearted Mr. Cauterucio dipped into his persoanl supply and provided Larry with enough bullets to compete in the shoot off.

All to no avail, as the other brothers Larry and Larry, as in Bryant and Boers, proceeded to nash their teeth while carving out a right decent pair of 250's. Larry Bryant punctuating his with 17X, while Mr. Boers (I can't help myself) bored 11 down the middle. LaGrande, season totatl point leader finishes a strong and sporting 2nd place! 1244-50X

That leaves Mainville, no were- wolves these, the pack stalks its victims regardless of phase of the moon! Fell, relentless, tenacious – Mainville forages ever on – questing to fulfill a ravenous appetite for victory . . . and . . . succeeding. The howling pack 1245-49X – 1990 American Conference Champions. Gary Long paced the pack with a 250-13X, while Randy Fritz (I told him not to use the damn thing – I just can't get any respect) 30/30ied his way to a 250-11X. It's Mainville with book end American Conference Championships — Congratulations!

Thank you all for another rewarding American Conference Season. Now, we'll all settle into our easy chairs for the winter, reading, dreaming, planning, enjoying the yellow red lapping flames of a warming fire – peaceful and relaxed and . . . one night, we'll hear a mournful hungry wailing – erie, riveting, bloodthirsty cries drifting on the wind – we'll quake . . . and thrill knowing that at least one pack still roams yet unmolested – unafraid, respected by all – what hunter could refuse the challenge to pursue? – until "91"

For Hunter Rifle Competition

R. G. Robinett

IBS News

Edited by Dave Brennan

1990 Score Championships

Dan Caruso takes hunter class title.
Gary McPherson wins varmint hunter crown.
Henry Buhrman's 500 score carries the day in varmint for score competition.

Hunter Class. Twenty-one shooters showed up, all dreaming of winning The Big One . . . The Nationals . . . for 1990. The weather was cool, sunny, and rapidly switching breezes. The 100 yard stage was won by Vince Pastorella, with a 250-17x score, the only 250 turned in for the class. Certainly Vince and his .308 have had an outstanding competition year in 1990. And with 200 yards looming the next day, that .308 was looking mighty tough for the grand agg. However, the best laid plans of men and mice (etc., etc.) often go astray. Dan Caruso, of the Pine Tree state, and a former national hunter class champ, turned in a four point margin of win at 200 yards. Vince seemed to be a mortal lock for the crown after his first four targets at 200 yards of 50-0X, 49-2X, 49-1X, and 50-0X. We don't know what happened on that final target, but a 37-0X settled the little matter of the grand agg. winner right conclusively. Mr. Caruso, the 200 yard winner, became Mr. Caruso the grand agg winner. What was that Casey Stengel quote... something about "it ain't over until it's over"?

100 Yard HUNTER—Top 10

1. Vince Pastorella 250-17X
2. Randy Fritz 248-10X
3. Frank McKee 247-10X
4. Guy Green 247-09X
5. Ira Farnsworth 247-09X
6. Joseph Gilbert 246-08X
7. Mark Johnston 246-07X
8. Ray Silver 245-09X
9. Erwin Shinkle 245-06X
10. David Kern 245-06X

200 Yard HUNTER—Top 10

1. Dan Caruso 247-04X
2. Frank McKee 243-05X
3. Todd Fritz 241-04X
4. Gary Long 241-00X
5. Joe Golba 240-02X
6. Parker Hills 240-00X
7. Ray Silver 238-01X
8. Randy Fritz 238-01X
9. Guy Green 237-03X
10. Tony Hidalgo 236-02X

Grand Agg.—Top 10

1. Dan Caruso 491-13X
2. Frank McKee 490-15X
3. Randy Fritz 486-11X
4. Vince Pastorella 485-20X
5. Guy Green 484-12X
6. Ray Silver 483-10X
7. Joe Golba 483-10X
8. Gary Long 483-10X
9. Todd Fritz 482-7X
10. Ira Farnsworth 481-13X

Varmint Hunter Class. After the drama of the "final target" in hunter class, Gary McPherson was to take a workmanlike win in this class . . . with a 6th place finish at 100 yards (Albeit only two points off the winner's score), and then win the 200 yard crown with a 248-4X score. The 100 yard crown winner, Ray Silver, slipped to a 243-4X at 200 yards, and thereby dropped into third in the grand agg. However, unlike Mr. Pastorella, there was no final target excitement . . . Mr. Silver merely dropped a little point here, a little point there. Hey, at 200 yards, in switching winds, you know how that goes, Boopsie. There was a good turnout for the varmint hunter class, 24 shooters on line.

100 Yard Varmint HUNTER—Top 10

1. Ray Silver 250-10X
2. Joe Gilbert 250-10X
3. Alan M. Kogoy 249-12X
4. James Zeyn 249-10X
5. Ken Livengood 249-6X
6. Gary McPherson 248-12X
7. Dan Caruso 248-11X
8. Dwight Furrow 248-9X
9. Mike Williams 248-9X
10. Ken Madeira 248-7X

200 Yard—Top 10

1. Gary McPherson 248-4X
2. Ken Livengood 247-4X
3. Ronald Gosciminski 246-5X
4. Bernard Williams 246-4X
5. Dwight Furrow 244-2X
6. Alan M. Kogoy 244-1X
7. Jim Zeyn 243-4X
8. Ray Silver 243-4X
9. Bob White 243-2X
10. John Lashock 242-2X

Grand Agg.—Top 10

1. Gary McPherson 496-16X
2. Ken Livengood 496-10X
3. Ray Silver 493-14X
4. Alan M. Kogoy 493-13X
5. Jim Zeyn 492-15X
6. Ron Gosciminski 492-14X
7. Dwight Furrow 492-11X
8. Joe Gilbert 491-15X
9. Mike Willliams 489-11X
10. Paul Creasy 485-14X

Varmint for Score. There were 78 shooters in this always popular class . . . which meant a total of 123 guns shot for the weekend. Barry DeViegher was to win the 100 yard crown with a 250-20X total, and just nosed out Ted Parreco who turned in a similar figure. However, over this weekend we can only gather that after anyone-at-all won a 100 yard crown he was immediately thereafter hit with feelings of guilt, possibly concerned about being accused of "hogging the hardware," or some other similar heinous character trait. In the great tradition of the previous 100 yard winners, Mr. DeVliegher promptly went into the tank at 200 yards. Fame is, apparently, a fleeting thing at best. Lester Bruno, who did not shoot the 100 yard stage . . . probably resting . . . won the 200 yard stage with a 250-6X score. Meanwhile, Henry Buhrman, who was confounded 18th at 100 yards, via a 250-11X (Ah, but with no points dropped), turned in a 250-5X at 200 yards, for second place, and the grand agg. as well, with nice clean 500-16X score.

100 Yard VARMINT FOR SCORE—Top 10

1. Barry DeVlieghr 250-20X
2. Ted Parreco 250-20X
3. George McCoy III 250-19X
4. Geza Nagy 250-17X
5. Tom Svack 250-16X
6. Craig Madeira 250-15X
7. Doug Wallace 250-15X
8. Dale Madeira 250-15X
9. Jeff Ely 250-15X
10. Bill Gebhardt 250-15X

200 Yard VARMINT FOR SCORE—Top 10

1. Lester Bruno 250-06X
2. Henry Buhrman 250-05X
3. Rod Morton 249-11X
4. Roger Gower 249-10X
5. Ted Parreco 249-10X
6. Jeff Ely 249-09X
7. Geza Nagy 249-08X
8. Doug Wallace 249-08X
9. Richard Baker 249-07X
10. F.L. Murphy 249-07X

Grand Agg.—Top Ten

1. Henry Buhrman 500-16X
2. Ted Parreco 499-30X
3. Geza Nagy 499-25X
4. Jeff Ely 499-24X
5. Doug Wallace 499-23X
6. Tony Margelewicz 499-20X
7. Bob White 499-14X (Did anyone else notice what a popular score 499 was?)
8. Barry DeVliegher 498-28X
9. George McCoy III 498-26X
10. Rod Morton 498-25X

I.B.S. Score Shooting Nationals, Mainville Sportsmans Club, Mainville, Pennsylvania 09/08/90 to 09/10/90

HUNTER Top 10 Equiment List

name	caliber	action	barrel	gunsmith	stocker	scope	power	case	load	bullet	primer
D. Caruso	308	Rem	Hart	Hart	Hart	Leu	6X	Rem	41.0g H4895	51168g	210M
F. McKee	30Aardvark	Rem	Schneider	Madeira	Madeira	Prem	6X	Fed	36.5g H322	Fritz134g	205
R. Fritz	30/30	722	Lilja	Fritz	Long	Weaver	6X	FedAM	37.0g T322	Fritz134g	7.5
V. Pastorella	308	Rem	Hart	Self	Self	Weaver	6X	Fed	41.0g 4895	Vp168g	Fed
G. Green	30 Dunno	Rem 722	Schneider	Self	Self	Pecar	6X	30AMI	35.0g 3032	Vince168g	7.5 Rem
R. Silver	6PPC	Rem	Wiseman	Pryor	McPherson	Leu	6X	RemBR	34.0g H4895	HP 66g FB	7.5 Rem
J. Golba	6X44 BR	Rem 700	Hart	Masker	Masker	WeaverT6	6X	RemBR	39.0g H748	Holliste 68g FB	Rem 7.5
G. Long	6X45	Rem	Lilja	Fritz	Long	Leu	6X	Rem	34.4g H4895	Fritz	7.5
T. Fritz	30/30	Rem	Hart	Fritz	Fritz	Lyman	6X	Fed	37.0g T322	Fritz134g	Rem
I. Farnsworth	30 IHLSA	700 Rem	Hart	Farnsworth	Hart	Leupold	6X	Win	37.0g 748	Sierra168g	210 Fed

VARMINT FOR SCORE Top 10 Equiment List

name	caliber	action	barrel	gunsmith	stocker	scope	power	case	load	bullet	primer
H. Buhrman	6mm Manx	Hart	Schneider	Self	Self	Premier	40X	Rem	28.5g H322	Estes 68g	7.5 Rem
T. Parreco	6PPC	40X	Scneider	Sinclair	Meredith	Premier	18-40X	Sako	29.0g H4895	Fowler 63g FB	7.5
G. Nagy	6PPC	CPS	McMillan	Mike Toth	Self	Leupold	36X	Sako	27.6g H322	Euber 68g FB	205M
J. Ely	6PPC	Teddy	Hart	Korzinek	Korzinek	Leu.	40X	Russ	28.9g GI 322	Rubright 68g	Rem 7.5
D. Wallace	6PPC	Hart	Hart	Pastorella	Pastorella	B&L	36X	USSR	322	Pastorel	Win
T. Margelewicz	6PPC	Hart/A	Hart	RWHart&Son	RWHart&Son	Leup	36X	PPC	27.6g H322	Rubright 65g	Fed
B. White	6PPC	CPS	Schneider	B.White	B.White	B&L	36X	Sako	28.3g H322	Rubright 63g	Fed 205
B. DeVlieghr	6PPC	Stolle	Hart	Masker	Six	Prem	45X	USA	26.5g H	Rubright 63g	205M
G. McCoy III	6PPC	Teddy	Hart	Kelbys	Sinclair	B&L	36X	USA	27.2g H322	Watson 68g FL	7.5
R. Morton	6mmHawk	Hall	Hart	Sinclair	Sinclair	18-40	X	Sako	27.0g T322	Fowler 66g	205M

VARMINT HUNTER Top 10 Equiment List

name	caliber	action	barrel	gunsmith	stocker	scope	power	case	load	bullet	primer
G. McPherson	6PPC	Rem 700	Hart	Pryor	McPherson	Leupold	6X	Sako	27.0g 8208	Fowler 66g FB	Fed205M
K. Livengood	6PPC	Rem	Hart	Pastorella		Weaver	6X	USA	26.1g 322	Vince 70g	205
R. Silver	6PPC	Rem	Wiseman	Pryor	McPherson	Leupold	6X	Sako	26.2g 8208	FB 66g HP	Fed
A. Kogoy	6PPC	Rem	Chanlynn	Fritz	Fritz	Leup	6X	Sako		Berger	
J. Zeyn	6 Olewine	700	Hart	Pastorella	Pastorella	Weaver	6X	Rem	28.5g H322	VP 70g	Rem
D. Furrow	6PPC	Shilen	Hart	Furrow	Furrow	Lep	36X	Sako	27.5g H322	Watson 68g	Fed
J. Gilbert	6PPC	700	Hart	Masker	Masker	Lyman	6X	Sako	28.0g H322	Euber 68g	205M
M. Williams	6PPC	Rem	Hart	Self	Self	Weaver	6X	Sako	27.5g H322	Olewine 70g	Fed205M
R. Gosciminski	6PPC	Rem700	McLennan	Pastorella	G.Long	Weaver	6X	Sako	H322	Fritz FL 62g TB	205
P. Creasy	6PPC	Rem	Hart	Fritz	Fritz	Lym	6X	Sako	27.7g H322	Fritz 62g	205

Rifles
International Benchrest Shooters

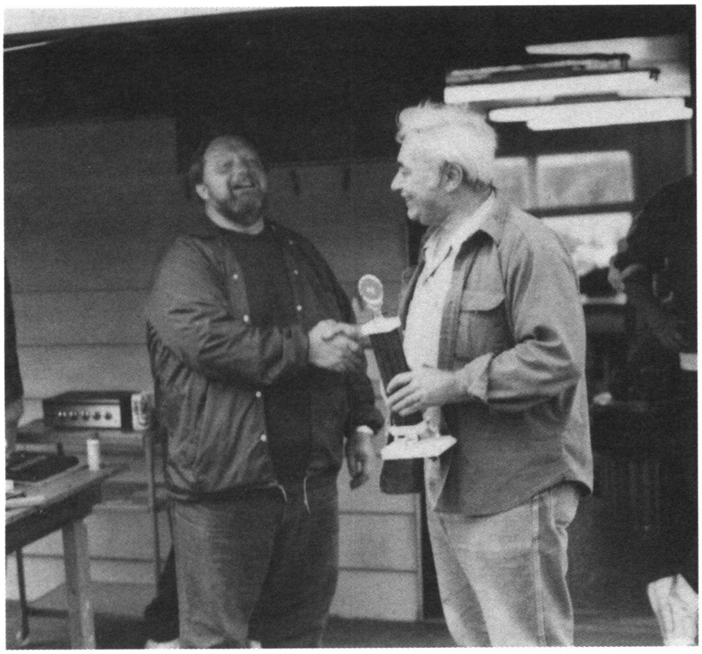
Top 3 Grand Agg.
VFS—Henry Buhrman; Var-Hunter—Gary McPherson; Hunter—Dan Caruso

Two fine gentlemen who need no introduction.

Geza Nagy—the only *PS* Columnist to do anything right in 1990.

Ray Silver doing his best as usual!

Maine to Florida Joe and TCL Tony.

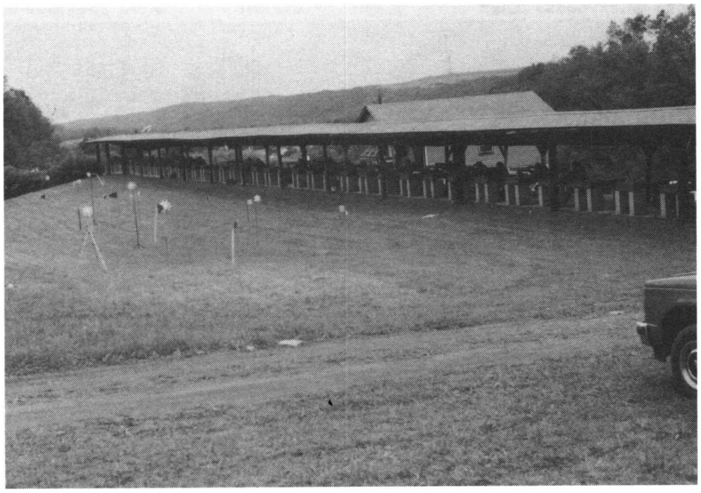


As always—one of the very best in score competition! Vince Pastorella.

A proud moment for this fine shooter! Deserves a spot in *PS* Allan M. Kogoy.

The wailling wall at Mainville.

Mrs. Alex Caruso toasting a cheer for Dan winning the Hunter Grand!



40 Bench line at Mainville.

The target crew 1990 Nationals. A great job well done! Boy Scout Troop 61.

IBS ANNUAL MEMBERSHIP MEETING

January 11 & 12, 1991

SHADOWBROOK RESORT
TUNKHANNOCK, PA
717-836-2151

AGENDA:

Friday Evening—January 11
Social Time in Sullivan Room
Soda, Beer, Coffe, Chips, etc.
Socializing & renewing friendships
6:00 P.M. until Midnight

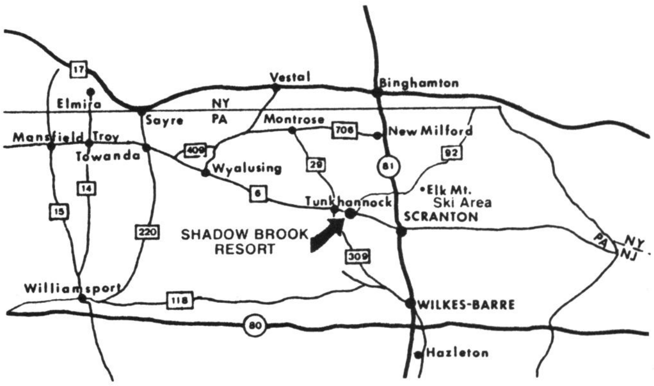
Saturday—January 12
Membership and Board of Directors Meetings
8:30 A.M. until 7:00 P.M.

- Open Membership Meeting
  - Committee Reports
  - Special Announcements
  - Financial Report
  - 1990 Championships
  - 1990 Shoot Schedule
- Old Business
- New Business
  - 1991 Agenda Items
- Seminars
- Adjourn

Breaks will be taken in morning and afternoon.

Other Motels:

Maplehurst (11 miles) 717-833-2121
Nichols Village (15 miles) 717-587-1135
Skyline (8 miles) 717-836-3145
Budget Inn (15 miles) 717-586-9100


17
Vestal
Binghamton
Elmira
NY
PA
Sayre
Montrose
706
New Milford
Mansfield
Troy
Towanda
409
Wyalusing
29
81
92
6
Elk Mt.
Ski Area
Tunkhannock
SCRANTON
14
15
220
SHADOW BROOK
RESORT
309
PA
NY
NJ
Williamsport
118
WILKES-BARRE
80
Hazleton

Agenda Items for 1991

1. Modified Rule Book No. 8—Score Shooting—Section VI, Paragraph C, item 5 to read:

   Nothing may be fastened to the barrel except sights, sight bases, and original manufacturer's attachments, with the exception of tape, paper, plastic or similar material used for the sole purpose of deflecting heat waves.

Officers for Election

The offices of President and First Vice-President are up for election in 1990 for the terms of 1991/92. The following are the IBS nominated candidates:

President — Jim Oliver

First Vice President — Brian Hollister

Ballots will be mailed to all IBS members in early November. Write-in votes are permissable.

ORIGINAL
PENNSYLVANIA
1000 YARD
BENCHREST
CLUB
INC.

Newsletter 1990

August 19, 1990 Newsletter #7

Match #7

Winning Equipment

8 Relays 74 Shooters

Name	Group	Cal.	BBl.	Scope	Gunsmith
1. Howard Wolfe	Blk 8.125	30.378	Hart	Unertl	Howard Wolfe
2. Sarah Morgan	10.250	.308 Baer	Oberm.	Redfield	Bruce Baer
3. Harvey Metz, Jr.	Blk 8.562	.308 Baer	Hart	Unertl	Bruce Baer
4. Allen Eveler	Blk 6.312	.300 Win.	Shilen	Leupold	M.D. Fix
5. George Smith	Blk 7.687	.300 Win	Hart	Weaver	Bruce Baer
6. Wayne Linsenbach	8.812	.308 Baer	Hart	Unertl	Bruce Baer
7. Tom Petrzala	9.968	.308 Baer	Hart	Unertl	Bruce Baer
8. Les Hagerman	7.375	.308 Sup.	Hart	Leupold	Bruce Baer

Name	Score	Cal.	BBl.	Scope	Gunsmith
1. Bill Hagerman	95 Blk	.308 Sup.	Hart	Leupold	Bruce Baer
2. Dwight Burk	86	.30 BGS	Oberm.	Unertl	Bruce Baer
3. Ron Bierly	96 Blk	.308 Nor.	Hart	Unertl	Howard Wolfe
4. Darryl Cassel	95	.308 Nor	Atk.	Unertl	Howard Wolfe
5. Mark King	95	.300 Wby.	Hart	Unertl	Howard Wolfe
6. Allen Miller	91	.300 Win.	Hart	Unertl	Howard Wolfe
7. Linda Hagerman	95	.308 Sup.	Hart	Leupold	Bruce Baer
8. Shirley Graybill	93	.308 Sup.	Hart	Unertl	Gene Graybill

SHOOT OFF WINNER GROUP
WAYNE LINSENBACH 8.125

SMALLEST GROUP FIRED
ALLEN EVELER 6.312

CLOSEST TO CENTER
MARK KING 0.312

SHOOT OFF WINNER SCORE
SHIRLEY GRAYBILL 91

HIGH SCORE OF THE DAY
ALLEN EVELER 98
GEORGE SMITH 98

ORIGINAL
PENNSYLVANIA
1000 YARD
BENCHREST
CLUB
INC.

Newsletter 1990

September 9, 1990 Newsletter #8

Match #8

Winning Equipment

9 Relays 82 Shooters

Name	Group	Cal.	BBl.	Scope	Gunsmith
1. Wayne Linsenbach	9.531	.308 Baer	Hart	Unertl	Bruce Baer
2. Wayne Eveler	9.000	300 Wby	Hart	Leupold	Unknown
3. Earl Chronister	5.250	30-378	Hart	Unertl	C. Hammond
4. John Bledsloe	8.593	30 Ack	Hart	Unertl	John Stoppa
5. Ted Morgan	10.375	.308 Baer	Oberm.	Redfield	Bruce Baer
6. Paul Dewalt	Blk. 6.437	.308 Baer	Hart	Unertl	Bruce Baer
7. Mark King	12.375	.300 Wby.	Hart	Unertl	Howard Wolfe
8. Roy Mummey	Blk. 7.125	7MM	Hart	Unertl	Bruce Baer
9. Larry Mitchell	5.375	30-378	Hart	Unertl	Howard Wolfe

Name	Score	Cal.	BBl.	Scope	Gunsmith
1. Harold Rice	89	.308 Sup	Hart	Unertl	Gene Graybill
2. Les Wilcox	89	.308 Sup.	Hart	Leupold	Bruce Baer
3. Linda Hagerman	93	.308 Sup.	Hart	Leupold	Bruce Baer
4. Shirley Graybill	93	.308 Sup.	Hart	Unertl	Gene Graybill
5. Tim Fronk	91	30 Ack	Atk	Unertl	Howard Wolfe
6. Howard Wolfe	92	30.378	Hart	Unertl	Howard Wolfe
7. Lowell Amand	91	30 Mag	Hart	Leupold	Gene Graybill
8. Lori King	94	.300 Wby	Hart	Unertl	Howard Wolfe
9. Sarah Morgan	93	.308 Baer	Oberm.	Redfield	Bruce Baer

SHOOT OFF WINNER GROUP
MARK KING 17.500

SMALLEST GROUP FIRED
EARL CHRONISTER 5.250

CLOSEST TO CENTER
LINDA HAGERMAN 0.312

SHOOT OFF WINNER SCORE
SARAH MORGAN
95 (BLK)
7.000 Group

HIGH SCORE OF THE DAY
ROY MUMMEY
97 (BLK)
7.125 Group

1990-1991 IBS VARMINT SHOOTING SCHEDULE

Jan. 19, 1991 — FLORIDA BENCHREST SHOOTERS — Florida Invitational — HV & LV, 100 yards, 9 am

Feb. 16-17, 1991 — FLORIDA BENCHREST SHOOTERS — Florida State Championships — Sat. 16th HV & LV 100 yards; Sun. 17th Hunter & Varmint for Score 100 yards

NOTE: PREREGISTRATION REQUIRED FOR FLORIDA MATCHES.

INTERNATIONAL BENCHREST SHOOTERS

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WEIKERT

A 200 yard score match for the score shooters on September 16th . . . at 200 yards, of all things. There was an accompanying 100 yard match for factory rifles.

Hunter Class (3 shooters): 1) Vince Pastorella 241-2X, 2) Ira Farnsworth 237-2X, 3) David Kern 234-2X. Mr. Pastorella shot a .308, Remington Action, Hart barrel, Weaver 6X scope, 41.0 grains of 4895 with his own 168 grain bullets. Vince was both gunsmith and stocker for the Rig.

Varmint-hunter (2 shooters): 1) James Zeyn 245-2X, 2) Pete Frask 237-2X. Mr. Zeyn shot a 6 Olewine, 700 Action, Hart barrel, Weaver 6X scope, 28.5 grains of H322 with VP 70 grain bullets in a Vince Pastorella smithed and stocked gun.

Varmint for score (17 shooters): 1) Ted Parreco 248-10X, 2) Gary Long 248-6X, 3) Ray Mitch 248-5X. Mr. Parreco shot a 6 PPC, 40X Action, Schneider barrel, premier 18-40X scope, 29.0 grains of H4895 with Fowler 63 grain bullets (is H4895 becoming popular in the 6 PPC these days?). Fred Sinclair was the gunsmith.

Factory Class (4 shooters): 1) Edward Clhowski 240-4X, 2) Leonard Kobb Jr. 239-4X, 3) Ron Smith 224-2X. The winner shot a Remington factory gun in .223 chambering, with a Leupold 36X on top, and 21.6 grains of 4198 and Sierra 52 grain bullets.

DUNHAM'S BAY

We always know that summer is over when Dunhams Bay holds their Memorial Match . . . now there's nothing left to do except wait for their Winter League to start up, in early January. And in previous years the day's proceeds are donated to charity; over $500.00 was raised for the Heart Fund, Cancer Fund, ALS' fund, and a few more worthy causes. Obviously several shooters gave more than the $10.00 entry fee.

Heavy Varmint class, 100 meters, 39 shooters: 1.) Myles Holister .2386, 2.) Tom Peria .2478, 3.) Jim Grenawalt .2638, 4.) Lou Church .2670, 5.) Norm Dixon .2758, 6.) Marty Caratsole .2884, 7.) Tom Svack .2930, 8.) Bill Niemi .3002, 9.) Rick Hornbeck .3018, 10.) Howie Levy .3100. Agg winner Myles Holister shot a 6ppc, Wichita Action, Chanlynn barrel, Levpold 36X scopre, 30.0 grains of N201 with his own 68 grain bullets and Federal primers. Myles did his own gunsmith work, and Norm Dixon was the stoker.

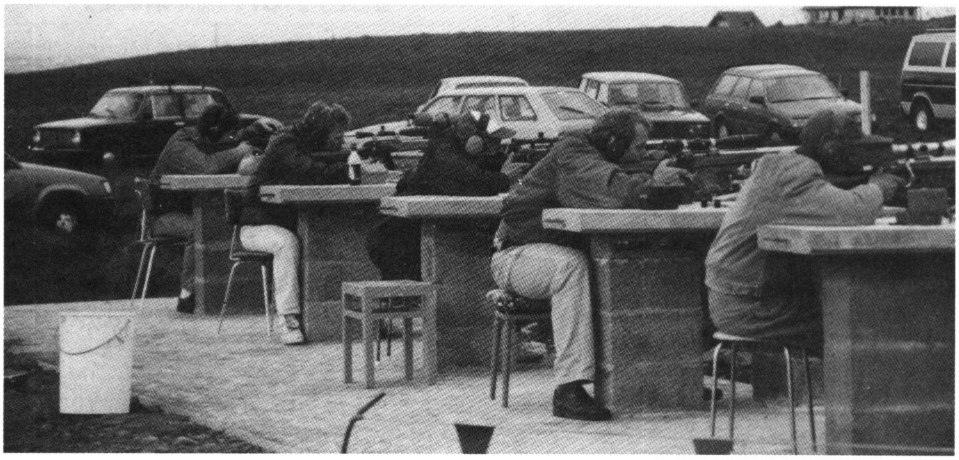
Hunter class, 100 yards, 6 shooters: 1.) Dan Caruso 248-10X, 2.) Fran Vahle 241-6X, 3.) Rocky Murray 239-6X. Agg winner Dan Caruso shot a .308, Remington Action, Hart barrel, Levpold 6X scope, 41.0 grains of H4895 with Sierra 168 grain bullets and Federal primers. Hart was both the gun smith and stocker.

ICELAND

The very first varmint for score, as well as varmint hunter class match to be held in Iceland took place on June 30, 1990. It was a downright chilly 44 degree day at the match site, in the town of Egilsstodun. In one of the two accompanying photos . . . Yep, that's snow in the background all right. This place must be someplace north of Maine . . . by the end of June even the Augusta range is snow-free.

Varmint hunter class (9 shooters): 1.) Ingvar Oskarsson 248-6X. 2.) Jon Arni 245-5X, 3.) Johannes Johannesson 245-3X. The Agg winner shot a 6ppc, Sako Acton, Hart barrel, and Holister 68 grain bullets. Gunsmithing was by Somundson.

Varmint for score (10 shooters0: 1.) Johannes Johannesson 249-14X, 2.) Jon Arni 246-7X, 3.) Adalstyn Hakonar. The Agg winner shot a 6ppc, Wichita action, Hart Barrel, and 68 grain Hollister bullets. Gunsmithing was by Holister.



GENESEE

The Genesee (New York) club has 15 shooters on line on September 16th for a 100-200 yard varmint for score match. Jim Oliver won the 100 yard, 200 yard, and grand agg crown, which made it a fairly good day for the good Mr. Oliver. At 100 yards: 1.) Jim Oliver 250-15X, 2.) Joe Frievald 250-13X, 3.) Jerry Klick 250-12X. At 200 yards: 1.) Jim Oliver 249-3X, 2.) Joe Frievald 248-9X, 3.) Harry Beaver 245-6X. Grand agg: 1.) Jim Oliver 499-18X, 2.) Joe Frievald 498-22X, 3.) Jerry Klick 495-15X. Jim Oliver shot a 6ppc, Stolle Action, Hart barrel, Levpold, Premier 50X, 27.9 grains of H322 with Hollister bullets. Smithing was by the Reboub table "Self."

SALISBURY

A 200 yard score match at the Salisbury, Maryland range on October 7th.

Varmint hunter class (1 shooter): Jim Fykes 244-4X.

Hunter class (4 shooters): 1.) Frank McKee 244-3X, 2.) Patrick DeVaney 242-5X.

Varmint for score (6 shooters): 1.) Eric Fykes 249-6X, 2.) William Dempsey 249-3X, 3.) George Rogers 246-6X.

CAMILLUS WINTER LEAGUE

1990-91 BENCHREST SEASON

The first three matches in December, 1990 will be Varmint for score-100 yards. We will return to Varmint for group-100 yards, for the Jan.-Feb.-Mar. matches.

DATES:

December 2-16-30

Varmint for score 5-5 shot matches

January 6-20

Varmint for group 6-5 shot matches the 5 best groups scored for agg.

February 3-17

Same as above.

March 3-17-24

Same as above.

Fee—$5.00 There will be a 50% return to shooters.

Starting time—10:30 A.M. Late arrivals will be accommodated if possible.

On these same dates the club will be open for the Winter Offhand, Trap and Skeet Leagues. The kitchen will be open.

Camillus Sportsmens Club
c/o Henry Gonnella
420 Hawley Ave.
Syracuse, NY 13203
(315) 474-1746

LEETOWN

The Leetown club held their third match of the 1990 season on August 5th, with 9 shooters, 7 of whom shot in the Varmint for score class. Eddie Warren, the sole shooter in the hunter class, not too surprisingly won the class with a 237-7X score. Gary McPherson, the sole shooter in the Varmint hunter class, not too surprisingly won the class with a 245-7X score. In the Varmint for score class the scores indicate some favorable shooting conditions: 1.) Gene Thompson 250-19X, 2.) Richard Pryor 250-18X, 3.) Pat Chrisman 250-14X.

PENTICTON

A ten shooter hunter class match at the Pentiction, Canada range on April 29th, in cold and nasty weather. At 100 yards: 1.) Bill Small 250-13X (Canadian Record), 2.) Bob Whitehall 250-9X, 3.) Ron Johnson 246-10X. At 200 yards: 1.) Vern Bouck's 244-3X, 2.) Ted Whitehall 244-1X, 3.) Matt Kalbarczzyk 243-0X. Grand Agg: 1.) Bob Whitehall 491-10X, 2.) Ted Whitehall 490-9X, 3.) Vern Bouck 489-7X.

I'm sure that many of our regular IBS readers are thinking to themselves . . . "where the heck in Penticton?" Our first clue is that many of these names are from the Pacific Northwest. This theory is set back a bit by the realization that Matt Kalbarezzyk is from Montana . . . but then again, people from Montana are always looking for an excuse to be somewhere else. The match report tells us that the range is located "On the bench above Highway 97, 6KM. North of the Okanagan River bridge in Pentiction." Never one to turn away from a challenge, we found it on our Rand McNally, in British Columbia (where we sort of suspected it might be). Just like we thought . . . it's a bit North of Mainville.

SULPHUR SPRINGS

A score match at the Muncy, Pa. range on September 30th.

Varmint hunter class (7 shooters) :1.) Carl Baker 247-9X, 2.) Ron Gosclminski 247-6X, 3.) Paul Creasy (Junior Shooter) 247-3X. The Agg winner shot a 6BR, Remington Action, Lilja barrel, Levpold scope, an unidentified 68 grain bullet with 29.0 grains of H322 and federal primers.

Hunter class (9 shooters) :1.) Frank McKee 250-16X, 2.) Erwin Shinkle 246-8X, 3.) Vince Pastorella 246-8X. The winner shot a 30 Aardvark, Remington action, Schneider barrel, Levpold 6X scope, and 37.0 grains of H322 with SG125 grain bullets and federal primers.

Heavy varmint for score (14 shooters) :1.) John Stahl Sr. 250-19X, 2.) Al Weaver 250-17X, 3.) Jeff Ely 250-17X. The Agg winner shot a 6ppc, Hall Action, Hartbarrel, Leupold scope, 27.5 grains of 322 with Demonstoy bullets and federal primers.

Light varmint for score (13 shooters): 1.) George McCoy 250-21X, 2.) Dennis Collins 250-17X, 3.) Bill Gebhardt 250-15X. The Agg winner shot a 6ppe, Teddy Action, Hart barrel, B&L 36X scope, with 27.2 grains of H322 and Watson 68 grain bullets and Remington 7½ primers.

GENESEE

The Genesee Conservation League hosted 12 shooters on October 21st for a 100-200 yard varmint for score match. When the shooting was all over . . . the same confounded guy who won the September match also won the October match. Something simply has to be done about what can only be termed the Oliver problem! At 100 yards: 1.) Jim Oliver 250-17X, 2.) Wendell Coye 249-6X, 3.) Tom Fargnoli 248-12X. At 200 yards: 1.) Jim Oliver 246-3X, 2.) Jim Stekl 245-4X, 3.) Harry Beaver 244-1X. Grand agg: 1.) Jim Oliver 496-20X, 2.) Wendell Coye 492-9X, 3.) Jim Stekl 491-16X.

YORK

Conditions had to be pretty good at the York County score championships on July 22nd. How good? Well, in the varmint for score competition, if you became a bit sloppy in your shooting, and actually dropped a point, thus turning up a 249 score . . . that knocked you out of the top 23 shooters. Yep, 23 souls "went clean" in that class on that day! We must observe the obvious . . . that ain't all that bad shooting, gang!

Vince Pastorella and Randy Fritz had 250s in the hunter class, but Vince turned up with two more Xs than Randy, and claimed the class win. With shooters in this class, the top three were: 1) Vince Pastorella 250-15X, 2) Randy Fritz 250-13X, and 3) Carl Baker 249-13X.

Frank McKee, Gary McPherson, and Ken Madeirahad a little hookout in the varmint hunter class, with250 scores, but Mr. McKee came out on top via the Creedmore Rule. Again we had nine shooters in the class. Top three, all with 250s were: 1) Frank McKee 250-18X, 2) Gary McPherson 250-18X, and 3) Ken Maderia 250-15X.

Eubert Burgess, Richard Pryor, and

Dennis Ballas all turned in 250-20X scores in the varmint hunter class, and again the Creedmore Rule had to be consulted, with the good Mr. Burgess coming out on top here. With 34 shooters in the class we had 23 with 250 scores, and 8 shooters with 249 scores. Rather impressive, as things go! Top ten shooters were: 1) Eubert Burgess 250-20X, 2) Richard Pryor 250-20X, 3) Dennis Ballas 250-20X, 4) Don Jones 250-19X, 5) Gino Sassani 250-18X, 6) Kent Harshman 250-18X, 7) Dale Madeira 250-17X 8) Bill Gebhardt 250-17X, 9) Bert Rypkema 250-17X, and 10) Calvin Willard 250-17X.

IBS REGISTERED YORK COUNTY CHAMPIONSHIP
100 YD YORK, PA, JULY 22, 1990

TOP TEN EQUIPMENT

VARMINT HUNTER	**CAL.**	**RIFLE**	**SCOPE**	**BULLET**	**LOAD**	**PRIM.**	**CASE**	**GUNSMITH**
1. Frank McKee	6 AMN	Rem/Rem	Prem/6X	69/Fowler	28.5/H4895	Fed.	Fed.	Madeira
2. Gary McPherson	6 PPC	Rem/Hart	Leu/6X	66/Fowler	27/8208	Fed.	Sako	Pryor
3. Ken Madeira	6S BR	Rem/Lilja	Leu/6X	168/Sierra	28/H322	Fed.	Rem.	Madeira
4. Al Weaver	6PPC	Rem/MacLn	Leu/6X	70/Vince	26.1/H322	Fed.	Sako	Pastorella
5. Randall Fritz	30BR	Rem/McMil	Wea/T6	134/Fritz	32/T322	Rem.	Rem.	Fritz
6. Alan Kogoy	6PPC	Rem/Chan	Leu/6X	—	—	—	—	Fritz
7. Pete Frask	6MM	Rem/Hart	Wea/T6	70/Vince	28.5/H322	Fed.	BR	Pastorella
8. K.L. Miller	6PPC	Rem/Wismn	Wea/T6	65/Watson	28/T32	Fed.	Sako	Hammonds
9. Bob Linn	6PPC	Rem/Hart	Lym/6X	60/Watson	27½/T32	Fed.	Sako	Hammonds
HUNTER								
1. V. Pastorella	308	Rem/Hart	Wea/6X	168/Own	41/4895	Fed.	Fed.	Self
2. Randy Fritz	30/30	Rem/Lilja	Wea/T6	134/Fritz	37/T322	Rem.	Fed.	Fritz
3. Carl Baker	HC30	Rem/Lilja	Leu/6X	130/Chism	36/H4895	Rem.	Fed.	Lilja
4. Alan R. Kogoy	30 AMN	Rem/Chan	Leu/6X	—	—	—	—	Fritz
5. Fred Reisinger	308	600/Hart	Wea/T6	168/Sierra	40/H4895	Fed.	Fed.	Green
6. Mark Johnston	6 AMN	Rem/Lilja	Wea/T6	70/Vince	—/H414	Rem.	AMN	Tooley
7. Guy Green	30 Dunna	Rem/Schdr	Pecar/6X	168/Vince	37.5/H4895	Rem.	AMN	Self
8. Eugene Davis	308	Rem/Lilja	Wea/6X	168/Sierra	47/H380	Rem.	Fed.	Davis
9. Ed Coulston	22/250	Rem/Rem	B&L/6X	—	—	—	—	Factory
VARMINT FOR SCORE								
1. Richard Pryor	6M Olwn	Wich/Wis	Prem/50X	66/Fowler	28/8208	Fed.	Rem.	Self
2. Eubert Burgess	6PPC	Teddy/Hrt	Prem/40	62/Euber	28.6/H322	Rem.	Sako	Masker
3. Dennis Ballas	22PC	Rem/Rem	Leu/30	52/Berger	25/GI322	Fed.	USA	Joines
4. Don Jones	6PPC	Stolle/Shln	Leu/36X	65/DJ	28/H322	Rem.	Sako	DJ
5. Kent Harshman	6PPC	Panda/Schn	B&L/36X	68/Estes	27.8/H322	Rem.	USA	Buhrman
6. Gino Sassani	6BR	Rem/Lilja	B&L/36X	68 Berger	30/H322	Rem.	Rem.	Madeira
7. Cal Willard Jr.	30	Witc/Sndr	Leu/60X	150/SG	41/H4895	Fed.	Rem.	Buhrman
8. Dale Madeira	6SBR	SLXP/Hart	Leu/36X	68/SG	28/GI322	Fed.	Rem.	Madeira
9. Bill Gebhardt	6PCC	Trop/Hart	Leu/60X	65/Rubrt	27½/H322	Fed.	Sako	Self
10. Ed Starzinski	6PPC	CPS/Sndr	Leu/36X	65/Rubrt	27/GI322	Fed.	Sako	Kempfer

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Make checks payable to IBS.
Allow up to 60 days for first magazine to arrive.

UNION COUNTY

A score match at the Weikert, Pa. range on October 14th.

Hunter class (6 shooters) :1.) Vince Pastorella 247-11X, 2.) Mark Johnson 247-9X, 3.) Frank McKee 274-8X.

Varmint hunter class (5 shooters) :1.) Kenneth Livengood 248-5X, 2.) Jim Zehn 246-6X, 3.) Pete Krask 245-5X.

Factory Class (4 shooters): 1.) Michael Robbins 247-5X, 2.) Edward Cihowski 243-5X, 3.) Ron SMith 238-3X.

Varmint for score class (20 shooters) :1.) David Obert 250-19X, 2.) Jeff Ely 250-18X. 3.) John Stahl 250-15X, 4.) Paul Ryan 250-13X, 5.) Ray Mitch 250-13X.

100 YARD SCORE SHOOT, UNION COUNTY SPORTSMEN CLUB, WEIKERT, PENNSYLVANIA 10/14/90

HUNTER Top 3 Equiment List

name	caliber	action	barrel	gunsmith	stocker	scope	power	case	load	bullet	primer
V. Pastorella	308	Rem	Hart	Self	Self	Weaver	6X	Fed	41.0g 4890	Own168g	Fed
M. Johnston	6 Amer	700	Lilja	Tooley		T6	X	Amer	40.0g H414	Pastorel 70g	7.5
F. McKee	30 Ardvark	Rem	Schneider	Madeira	Same	Leup-Pre	6X	Fed	37.0g H322	SG125g	205

VARMINT FOR SCORE Top 10 Equiment List

name	caliber	action	barrel	gunsmith	stocker	scope	power	case	load	bullet	primer
D. Obert	6ppc	CPS	Hart	Korzinkek	Weaver	Leup	36X	Sako	68.2g GI322	Rub. 68g FB	REM 7.5
J. Ely	6ppc	Teddy	Hart	Korzinek	Korzinek	Leu-Prem	40X	Russ	28.0g GI322	Rubright 68g	Rem 7.5
J. Stahl	6ppc	Hall	Hart	Mitch	Mitch	Leup	36X	Sako	27.5g	Demonsto	Fed 205
P. Ryan	30 AM	Hart 1A	Hart	Borden	Hart	Leu	36X	Fed	37.0g GI322	Sierra150g	Fed
R. Mitch	6MM	Hall		Self	Self	Leup	X	PPC	H322		
A. Weaver	6PPC	Stolle	Hart	Pastorella	Same	Leup	36X	Sako	28.0g H322	Vince 70g	210
R. Fritz	6PPC	CPS	MacLennan	Fritz	Fritz	Leup	36X	Sako	27.0g T322	Fritz 62g	F205
B. Gebhardt	6PPC	ISMS	Hart	Self	Self	Leup	60X	Sako	27.5g H32	Rubright 65g	205M
A. Handschuh	6PPC	Wichita	Har	Borden	Self	Leup-SIE	45X		27.0g T-32	Berger 68g	Fed 210
W. Theis	6BR	CPS	Hart	Pastorella	Hammond	B&L	36X	Rem	30.1g H322	VP 70g	Rem

VARMINT HUNTER Top 2 Equiment List

name	caliber	action	barrel	gunsmith	stocker	scope	power	case	load	bullet	primer
K. Livengood	6ppc	Rem	Hart	Pastorella	Pastorella	T6	6X	Sako	28.0g 2460	Vince 70g	Fed
J. Zeyn	6 Olewine	700	Hart	Pastorella	Pastorella	Weaver	6X	Rem	29.5g 2460	VP 70g	Rem 7.5

SELKIRK

The Selkirk Club again hosted the Manitoba Light and Heavy Varmint Provincial Championships on August 25th and 26th. This is usually our biggest shoot of the year and this year was no exception.

The wind took its toll on the shooters, wearing them down with velocity changes and direction changes. I know your readers will find this hard to believe but I think there was a little foul language coming from the firing line; sad but true. I guess that's why we all wear hearing protection. Our steak Bar-B-Q and corn roast held on Saturday night helped everyone forget the mistake they made that day.

Light Varmint (23 shooters) 100 yds. 1.) Al Phillips 2962, 2.) Everett Amundgoard .3094, 3.) Peter Penner .3228, 4.) Dwight Fitzsimmons .3230, 5.) Chuck Pond .3478. Small group was Brad Holter with a .167. At 200 yds. 1.) Al Hiebert .3484, 2.) Bill Slocombe .3746, 3.) Everett Amundgoard .4021, 4.) Grant Schick .4215, 5.) Herman Hefta .4279. Small group was Herman Hefton with a .314. Grand Agg: 1.) Evertt Amundgoard .3558 2.) Al Phillips .3665, 3.) Al Hiebert .3681, 4.) Bill Slocombe .3713, 5.) Peter Penner .3838. Grand Agg winner Everett Amundgoard shot a 22 P.P.C. out of a Hart Barrel and Stolle action. Jerry Simison gunsmithed the gun, and Fred SInclair did the stock work. Everett had a 36X Levpold on top, and used an unspecified amount of H322 with 51 gr. P.C.B.C. bullets to get the job done.

Heavy Varmint (25 shooters) 100 yds: 1.) Peter Penner .3012, 2.) Everett Amundgoard .3328, 3.) Jack Leader .3336, 4.) Don Judd .3398, 5.) Bill Slocombe .3402. Small group was George (Corky) Holter's nice little .163. 200 yds. 1.) Herman Hefta .3287, 2.) Don Judd .3330, 3.) Chuck Pond .3364, 4.) Doug Seib .3375, 5.) Al Phillips .3429. Small group was Chuck Pond and his little .301. Grand Agg :1.) Don Judd .3364, 2.) Al Phillips .3340, 3.) Everett Amundgoard .3589, 4.) Ted Gaillard .3621, 5.) Stan Legg .3687. Grand Agg winner Don J. Judd shot a 6ppc out of a Lilja Barrel and a Hall action. He did the gunsmithing and stock work himself and used a 36X Levpold to find the tartget. He also used 27.5 grs of T322 and his own 68 gr. bullets to get the job done.

Two Gun Aggregate: 1.) Al Phillips .3553, 2.) Everett Amundgoard .3574, 3.) Bill Slocombe .3778, 4.) Don Judd .3869, 5.) Chuck Pond .3887, 6.) Peter Penner .3924, 7.) Herman Hefta .4099, 8.) Dwight Fitzsimmons .4144, 9.) Al Hiebert .4186, 10.) George Holter .4222.

This brings to a close our 1990 Benchrest Program and I would like to thank all the travellers who support us and all the volunteers who helped put the shoots together

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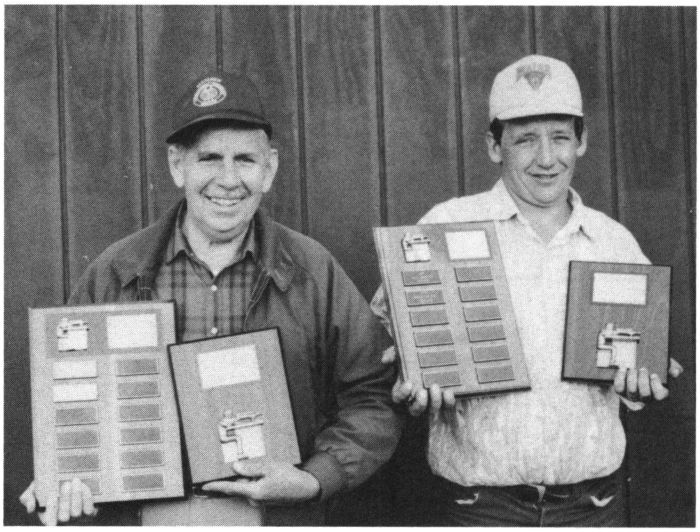
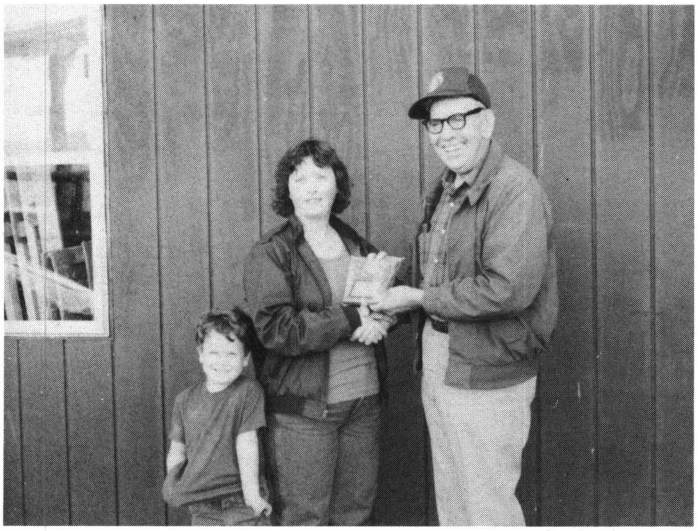
JOE GILBERT PHOTOS

Ira Farnsworth (left) and Blain Johnson scoring targets at Augusta. There are no bullet holes that we can see in the back of that target. Should be an easy one to score!

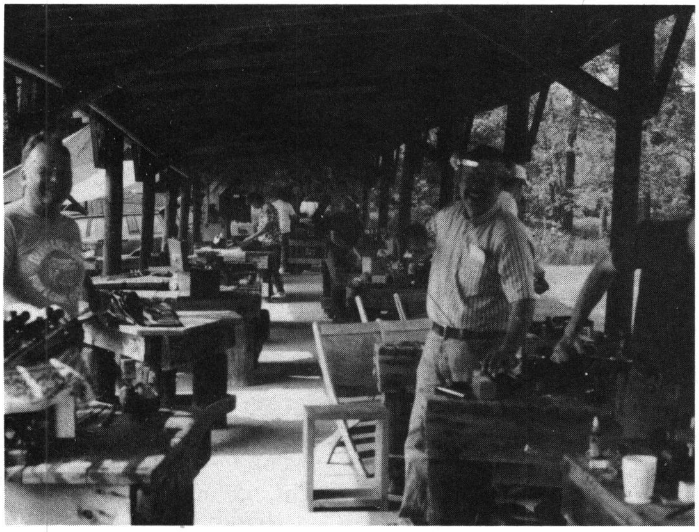


Maine Shooter of the year awards. Joe Gilbert (left) for varmint hunter, and Blaine Johnson, for varmint for score. Not present was the hunter class winner, Dan Carvso.

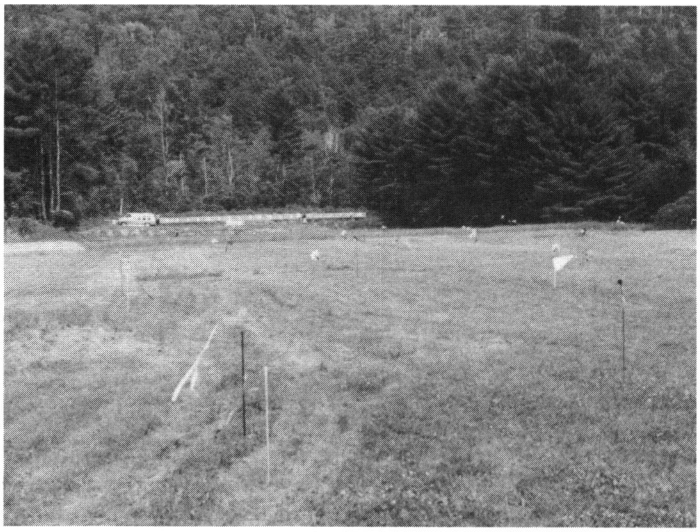


Donna Erskine winning her first varmint for score match, at Augusta. The young fellow appears to be savoring the moment.

The firingline at Dunham's Bay. The first three shooters can be identified as Ed Hoard, Jim Oliver, and Lou Church.



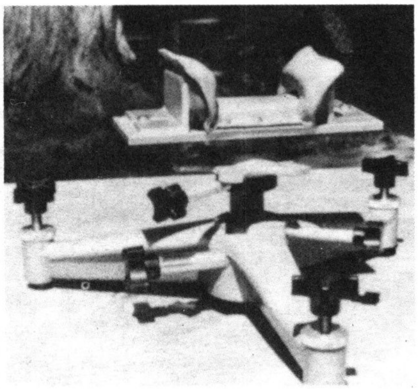
Rifle cleaning time of Dunham's Bay. Must have been a good relay, everybody's smiling!



The 200 yard targets at the Bay (in case anyone has forgotten exactly how far away 200 yards is).

The new

Bald Eagle Front Rest



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